ARMY AVIATION

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The challenges we face

by General John A. Wickham, Jr., Chief of Staff, United States Army

[AN APRIL 11 VIDEOTAPE MESSAGE PRESENTED TO THE AAAA MEMBERS ATTENDING THE 1986 NATIONAL CONVENTION IN ATLANTA, GEORGIA]

THANK you very much, **General Parker,** and good morning to all of the attendees at the AAAA Convention. I regret that I'm not able to be there in person, but I did want to take the opportunity here to share some thoughts about where Army Aviation has been and where we think it is headed and some of the challenges that face Army Aviation.

I think the AAAA Convention is a wonderful opportunity to bring together retirees and members of industry, as well as the folks in the active Army, to talk about key issues facing Army Aviation — and, as all of you know, we've come a long way in building a more robust capability with our aviation.

Alive and well!

The Aviation Branch, it seems to me, is alive and well although we had some difficulty getting the final decision to do that. I think there are still some doubters out in the force that Army Aviation will, in fact, continue to be oriented as part of the Combined Arms Team, but I'll come back to that in just a minute. I think we can deal with that in a forthright way.

We've made a lot of progress in gearing up our schooling. We now have, as you know, officers' and warrant officers' courses that are oriented towards a combined arms dimension and we're gearing up with our enlisted training as part of the branch itself.

As you also know, we've begun the fielding of the APACHE helicopter, and the BLACK HAWK has been in the force for a few years. So, we're continuing down that road, and we're also beginning to work towards the fielding of the AHIP. The LHX is still underway as we go through the process of continuing the research and development. So I think a number of areas within Army Aviation are worthy of commendation.

Now, there are some new challenges that we face as we look to the future. Some of the challenges deal with the fact of life that the Gramm-Ruddman-Hollings Law is with us and that may lead to some reductions of funding. We've already had to take some reduction in this current fiscal year and in 1987 — if the Congress is unable to make the adjustments in the fiscal levels — then we may have to undertake some additional reductions within the Army budgets. I hope that doesn't come to pass, but that is a possibility that we have to face.

I think we need to continue our efforts as we further the equipping of our force with the new helicopters, as we go through their fielding, and as we also go through the process of developing the requisite support of these assets in the field. Particularly with the APACHE and as the AHIP begins to come into the field.

Harvesting the lessons learned

We have another dimension of challenge in harvesting the lessons learned between the ground commander and the supporting aviation commander in our Nat'l Training Center (NTC) and as we do exercises involving live aircraft and ground forces around the world.

We've learned a lot from the use of our forces at the NTC, but we're still in the process of harvesting lessons learned as to how we've developed that synergism between Army Aviation and the ground commander at periods of reduced visibility—night time, dusk, or obscuration—and we're developing our understanding of how the helicopter dimension fits in with the fixed wing dimension in the sophisticated environment of the NTC.

Assuring that there's a proper understanding on the part of the ground commander of the

(CHALLENGES—Continued on Page 56)

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June 30, 1986—A Special Report on the production and fielding of the AH-64 APACHE attack helicopter.

July 31, 1986—A General News Issue which includes the "SPOOF Roster", a directory of AAAA's retired members.

August-September, 1986—The 1986 "Blue Book", a directory of Army Aviation units, offices & agencies worldwide.

FRONT COVER
The Boeing-Vertol Chinook CH-47D Medium Lift Helicopter in action.

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Army Aviation

VOLUME 35 **NUMBER 5**

RESPONSE FORM

Be a part of the 1986 "Blue Book"!

RESPONSE FORM

The third annual Army Aviation Magazine "Blue Book" will be published as part of our August-September issue. The "Blue Book" is a listing of all Army Aviation offices, agencies, and units (battalion size or larger*). If your unit, office or agency was not listed last year, or you have had changes in personnel, address or phone, please fill out this form and send it in. Please return this form by June 30, 1986.

(Name of Army Aviation Agency, Activity or Unit)*

(Mailing Address — include File Symbol)

(City) (State) (ZIP Code)

(Parent Unit)

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(Job Title, if other than "Commander")

(Commander's Com'l Phone No.) (Commander's Autovon No.)

(Rank, First Name, MI, and Last Name of Deputy Commander)

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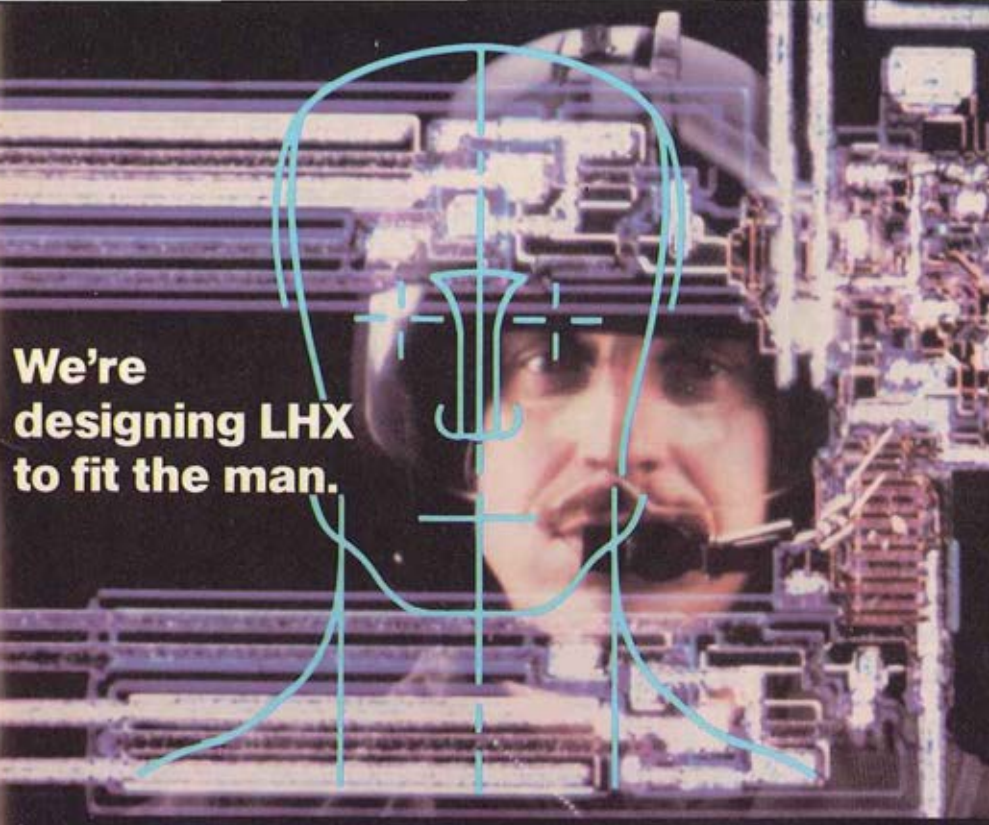
(Grade, First Name, MI, and Last Name of Senior NCO)

(Senior NCO's Com'l Phone No.) (Senior NCO's Autovon No.)

Submitted by: Date:

A photo of the Commander (any size, preferably black and white) will be used with the unit listing, if one is submitted. The photo cannot be returned.



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LHX

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DOUGLAS

Atlanta, 1986: A successful team event

by Major General Ellis D. Parker, Commanding General, US Army Aviation Center and Ft. Rucker, Alabama

CONGRATULATIONS to all whose combined efforts made the most recent AAAA National Convention a successful aviation team event. Excellence has become synonymous with these presentations and proceedings and, combined with the exciting exhibits and an ample social program, the Convention continues to be an aviation community highlight each year.

The success of the 1986 Convention underscores the teamwork that has made possible the rapid progress of the Army's Aviation Branch in just three years. Our team spirit has made us a powerful partner on the Combined Arms Team, and we are certain to see continued progress in harnessing our full potential.

Vital communication

At the Convention, one of the presentations I found to be particularly beneficial was the non-commissioned officer update regarding the total reorganization of Career Management Field 93. During the update, **MSG Hartwell Wilson** addressed how this reorganization will affect Aviation Operations personnel (Military Occupation Specialty 93P). Since there has been a promotion stagnation in MOS 93P and **MSG Wilson** outlined the solution, this issue generated the greatest interest from among the enlisted topics presented. Eliminating this stagnation will provide a much needed flow of non-commissioned officers into key leadership areas within MOS 93P. This session was a good example of effective two-way communication that was echoed throughout the other professional programs and panels.

Another item of importance was the participation of **MG Fred E. Elam**, Commandant of the U.S. Army Aviation Logistics School. **MG Elam** eloquently outlined the need to integrate aviation into all that we do in the Army. He reminded us of the need to maximize the use of aviation as a battlefield multiplier toward accomplishment of the foremost mission of the entire force — "winning the first and follow-on battles ..." We're grateful for the excellent support we receive from the logistics community and the other branches of our total force.

OH-58D FOE

Turning aside from the Convention, allow me to review a few of the most recent events that are of interest within our branch.

In a previous article I mentioned that a new unit would be formed at Fort Rucker to conduct the Follow-on Evaluation (FOE) of the OH-58D in the scout role. This was done 1 April 1986 when Task Force 1-112 (Provisional) was activated. Although this is just the initial step toward the FOE, it marks the first time a system's proponent has been able to take a new system and form an organization with it, test that organization and its associated doctrine, and test the ability to deploy that organization. To effectively carry out evaluations, the composition of TF 1-112 will be as follows:

- one AH-64 (Pure) Company
- one AH-64 and OH-58D Company
- one AH-64 and OH-58C Company
- one Aviation Unit Maintenance Company.

Two of the company mixes are designed to test the capabilities of the OH-58D as compared to the OH-58C model. The AH-64 pure company is designed to determine whether the attack helicopter can effectively carry out its mission without a scout helicopter.

My congratulations to **LTC Michael D. Weaver** who assumed command of TF 1-112 during ceremonies at Fort Rucker on 17 April 1986. All of us now look forward to the data that will be derived from the testing, and I will keep you posted as more becomes available.

One final item of scout helicopter news is the 25 March arrival fo the first production model OH-58D at Fort Rucker. By December, 1986, 23 more OH-58D models are scheduled to arrive, primarily to be used in pilot and enlisted aerial observer training.

New flight suits

Questions frequently arise regarding the status of the Battledress Uniform (BDU) flight suit. In brief, here is where we stand. During a December, 1985, In-Progress Review, design changes were recommended. Natick Lab, the developer, has provided new prototype uniforms incorporating these changes. Efforts to provide a camouflage Nomex uniform have been hampered because needed technology has not fully matured. Progress will remain at this current state for the short term, as Natick Lab has recently announced that they have lost all remaining BDU flight suit research and development funding for Fiscal Year 1986.

A related development is the two-piece Aircrew Uniform - Integrated Battlefield (AUIB), a fire retardant Nomex flight suit with an incorporated charcoal liner designed for NBC protection. Current Opera tional Testing (OT) is in progress in Alaska and Panama, with testing designed for data collection in a cold and hot environment, respectively. It has been reported that results are very favorable.

Concurrently, developmental testing is taking place at Fort Rucker which will provide durability data derived from 7, 15, and 30 day wear periods — each "day" being 12 hours in length. Once the Fort Rucker AUIB development tests are complete, the test uniforms will be shipped to Dugway Proving Grounds, Utah, for chemical resistance experiments.

AAAA AWARD WINNERS—Four individuals and two units received annual awards at a general membership meeting of the Army Aviation Center Chapter at Ft. Rucker, Ala., in late March. Recipients of the awards are shown above. They are, from left to right, MAJ John E. Pack, Company D, 7th Aviation Training Battalion, Aviation Training Brigade (Aviation Unit of the Year); 1SG Ronald W. Alexander, 4th Aviation Training Battalion (Special Award); CW4 Michael L. Talton (Army Aviator of Year); CW4 Thomas M. Cloud (Safety Award); SSG Ronnie Garrett (Aviation Soldier of Year); and Clyde O. Nesbitt (DAC of the Year). Other meeting highlights were update briefings on the OH-58D KIOWA with the first production model being delivered to Ft. Rucker just prior to the meeting.

Another concurrent development is the request for an out-of-cycle AUIB OT II now at Headquarters, Training and Doctrine Command, for approval. Tentative plans provide for testing of the AUIB to began at Fort Stewart, Georgia, in July of this year with crews from UH-1, UH-60, CH-47, AH-1, and OH-58A/C equipped units. Final crew testing will be with AH-64 and OH-58D units at Fort Rucker.

New colors

In conclusion, I note one recent event that marks our movement forward in Army Aviation. On 4 April 1986 our old Aviation Center Flag was retired at Fort Rucker. It was replaced by new colors bearing the branch insignia of gold wings and a prop on a background of ultramarine blue with a gold-orange fringe. As I said on that occasion, it is truly the first branch flag of Army Aviation and symbolizes the solidification of aviation as a branch and as an intregal member of the Combined Arms Team. IIIII

March-June, 1986 Calendar of AAAA Chapter Activities

March, 1986

■■Mar. 19. Wings of the Devil Chapter. Bi-Monthly Membership Meeting. Mr. Vernon Albert, Petroleum Helicopters, guest speaker. "Off Shore Flying". Fort Polk Officers' Club.

■■Mar. 26. Coastal Empire Chapter. General Membership Meeting. Election of a New Chapter President, update on Air Show, planning for the AAAA National Convention. Hunter Army Airfield Officers' Club.

■■Mar. 26. Mid-America Chapter. Election of Chapter Delegates. Mr. Larry Welch, McDonnnell-Douglas Helicopters, guest speaker. "AH-64 APACHE Helicopter Program Update". Patton Hall, Ft. Riley.

■■Mar. 27. "Follow Me" Chapter. General Membership Meeting and Luncheon. Planning for AAAA National Convention. Ft. Benning NCO Club.

■■Mar. 27. Checkpoint Charlie Chapter. Professional Meeting. Report on the AAAA Convention, Garmisch. Aviation Detachment.

■■Mar. 31. Rhine Valley Chapter. General Membership Meeting. Coleman NCO Club.

■■Mar. 31. Ozark Mountain Chapter. General Membership Meeting. Executive Board Update. "The Hub", Ft. Leonard Wood.

April, 1986

■■Apr. 3. Edwin A. Link Chapter. Professional Dinner Meeting. Election of New Officers, Presentation of Scholarships. MG Charles F. Drenz, guest speaker. "The AH-64A APACHE Helicopter Program". Morey's Restaurant, Binghamton, N.Y.

■■Apr. 3. Tennessee Valley Chapter. Professional Meeting and Luncheon. Mr. John F. Johnson, Chief Avn Materiel Division, National Guard Bureau. "Aviation Depot Maintenance Roundout." Redstone Arsenal Officers' Club.

■■Apr. 5 & 12. Lindbergh Chapter. Bowling Tournament. Dick Weber Lanes, St. Louis.

■■Apr. 16. Lindbergh Chapter. Happy Hour Welcoming WOC Conferees. King Henry VIII Inn.

■■Apr. 17. Air Assault Chapter. Professional/Social Meeting. COL Barry J. Sottak, Commander 101st Aviation Group, guest speaker. "The AAAA National Convention". Air Assault Enlisted Club.

■■Apr. 24. Colonial Virginia Chapter. Professional Meeting and Luncheon. MG Ellis D. Parker, Commander, USAAVNC, guest speaker. Ft. Eustis NCO Club.

■■Apr. 30. Ft. Bragg Chapter. Professional Meeting. Election of Officers. Yntema Club.

May, 1986

■■May 2. Hanau Chapter. Professional Meeting. MG Edwin A. Aguanno, guest speaker. Modernaire Club.

■■May 5-7. Ft. Monmouth Chapter. "1986 AAAA Electronics Symposium". Berkeley Carteret Hotel, Asbury Park, N.J.

■■May 8. Leavenworth Chapter. Professional meeting. Update on the AAAA National Convention. Ft. Leavenworth Officers' Club.

■■May 9. Monterey Bay Chapter. Professional meeting. Update on the AAAA National Convention.

■■May 13. Delaware Valley Chapter. Professional meeting and dinner. COL Guion S. Bluford, Jr., NASA astronaut, guest speaker. "The Space Shuttle Program". Media Towne House, Media, PA.

■■May 14. Fort Hood Chapter. Professional/Social Meeting. Chapter Elections, AAAA National Convention Report, MilPerCen Update. CW4 Tom Storey, guest speaker. Ft. Hood Officers' Club.

■■May 15. Lindbergh Chapter. Professional meeting and Dinner. Mr. William P. Brown, President of McDonnell Doulglas Helicopters, guest speaker. St. Louis Airport Marriott.

■■May 15. Arizona Chapter. Professional Social Meeting. "AvWeek Paris Air Show Videotape". Papago Arizona ARNG Army Aviation Support Facility.

■■May 16. Wings of the Marne Chapter. Professional-Social meeting. Film, "Sex and the Naval Aviator". Giebelstadt Theatre, GAAF.

■■May 16. Taunus Chapter. General Membership Meeting. COL Raymond Boland, guest speaker. "Brigade Aviation". Wiesbaden Air Base Club.

■■May 16. Corpus Christi Chapter. General Membership Meeting, Fish Fry and Dance. KC Hall.

■■May 17. Chesapeake Bay Chapter. Lobster Bake, Family Day and Business meeting. Chapter Elections. Army National Guard Operating Activity Center.

■■May 17. Morning Calm Chapter. Spring AAAA Picnic, Parachute Demonstration, Sports Day. Camp Humphreys.

■■May 20. Bonn Area Chapter. Professional meeting. H.J. Mummenbrauer, Cdr, BGS Aviation Group, guest speaker. "Helicopters in the German Border Guards."

■■May 28. Indiantown Gap Chapter. General Membership Meeting. "AvWeek Paris Air Show Videotapes". PAARNG MA Classroom Bldg 11-66.

■■May 30. Jack H. Dibrell (Alamo) Chapter. Annual Golf Scramble and General Membership Meeting. Fort Sam Houston Golf Course.

June, 1986

■■June 18. Checkpoint Charlie Chapter. General Membership Meeting. Topic, "Summer Activities". Aviation Detachment Classroom.

■■June 20. Morning Calm Chapter. General Membership Meeting and Sports Tournament and Picnic. Eighth U.S. Army Golf Club and Yongsan Softball Fields (Trent Gym). Hosted by Central Area.

"Atlanta, 1986? It was great!"

Atlanta-'86 sets new highs in turnout, briefings, & exhibits

AAAA's April 9-13, 1986 National Convention in Atlanta, Ga., was a typical gathering . . There was always too much to do and, like past conventions, there just didn't appear to be sufficient time to do everything that was offered in the program.

The professional side

A professional program developed by **MG Ellis D. Parker** in his role as 1986 Presentations Committee Chairman featured 34 separate briefings — a new high at AAAA — along with seven top drawer Q & A panels.

Highlights of the professional program were a 17-minute videotape message to the attendees by **GEN John A. Wickham, Jr.**, Chief of Staff; the opening keynote address by the **Hon. Jay R. Sculley,** ASA (RDA); and a 25-min. "Here's where we're at; here's what we've got to do" LHX briefing at Saturday's *First Light Breakfast* by **BG Ronald K. Andreson,** Project Manager-LHX.

Key briefings were also given by **LTG Louis C. Wagner,** DCSRDA; **LTG Benjamin F. Register,** DCSLOG; and **MG Fred E. Elam,** CG, USATC & Comdt, USAALS.

The AAAA's 1986 Exhibit Hall featured 106 industry/military exhibits spread over 100,500 square feet in the Georgia World Congress Center.

Personnel policies were covered by **MG John S. Crosby** while **MG William H. Harrison,** CG, 7th ID; and **MG Leroy N. Suddath, Jr.,** CG, Special Operations Command, covered *Combat Operations.*

A top-level group of Aviation NCO's offered an outstanding three-hour program; however, NCO attendance at the *Second Aviation NCO Conference* was sparse. In another room at the Congress Center, the *First Spouses' Conference* drew a fair number of attendees.

The social side

Each evening offered a new opportunity to mix and mingle . . The **Early Birds' Reception** at the hotel on Wednesday night was tuna-pack; Thursday's late afternoon and early evening **Exhibitors' Reception** was well attended while the **President's Reception** on Friday evening — with 1,140 present — set three new AAAA records:

(1) its receiving line was the shortest ever, running only 19 minutes;

(2) its total of five Steamship Rounds topped the four consumed in '85, and

(3) four of the six Friday night Chapter Receptions received some 11 leftover trays of hot and cold hors d'oeuvres.

The Atlanta-1986 Numbers

Registrants (incl. Spouses)	2,065
Visitors (Exhibit Hall Only)	1,260
Total 1986 Attendees	3,324
1986 Awards Banquet	1,438
Hotel Rooms (Fri., Apr. 11)	1,314
Exhibit Hall Sq. Ft. Sold	32,100

The formal **Awards Banquet Reception** held on Saturday evening: beautiful gowns, dress blues everywhere, and almost all of the civilian attendees being present in tuxedos this year. All in all, an exceptionally colorful affair.

The **1st Aviation Brigade 20-Year Dinner** was a resounding success, some 448 **Golden Hawks** and their spouses coming from near and far to re-live old memories and renew old friendships.

Late night? Again, plenty of action as attendees and their spouses visited 17 separate Chapter Receptions over the three nights. The *Aviation Center Chapter Reception* was truly "Above the Best" being held in the Skyline Lounge, a full 10th floor overlooking the atrium. The Chapter Receptions are a unique AAAA activity, and an outstanding effort of hosting by the Chapters.

Atlanta — 1986

MG George W. Putnam, Jr., AAAA's Nat'l President, greets the Convention attendees. Below: The exhibit hall OH-58D AHIP display. Bottom: The '86 Awards Luncheon head table.

John J. Stanko, Jr., left, the AAAA's Nat'l Treasurer, delivers the AAAA's fiscal report at the Annnual Membership Meeting; MG Jim Smith, Nominations Committee Chairman.

Some 200 Atlanta-area teenagers who had expressed an interest in an aviation career were exhibit hall visitors, and are shown by the U.S. Army's CH-47D Chinook display.

A part of AAAA's 14-trophy Annual National Award collection is shown at a separate display table during the Friday evening, April 11 AAAA President's Reception.

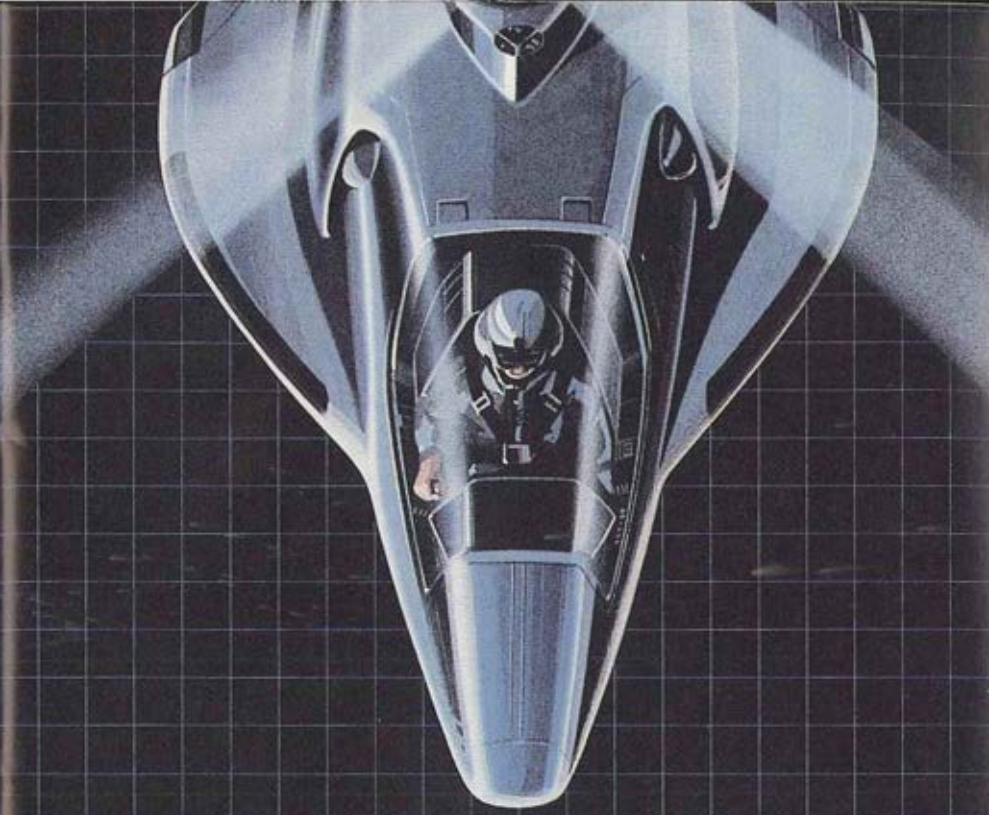
Atlanta — 1986

⬆ Command Sergeant Major Bobby Burnette of USAREUR's 11th Combat Aviation Group, addresses the *1986 Aviation NCO Conference* during the 1986 Convention.

⬆ Ten Convention Bureau hired hands helped the Nat'l Office staff with Registration. BELOW: The Aviation Center Chapter's Reception on the Skyline Level.

⬆ The FORSCOM Color Guard during the Saturday evening Awards Banquet. BELOW: Some 33 members of AAAA's splinter group, the WW II Cub Club, gather in Suite 4630.

⬇ Part of the Georgia World Congress Center's Ballroom - site of the 1986 professional sessions - and with 33,000 square feet capable of seating up to 4,700.



A team of giants takes the LHX challenge.

Two familiar names. One superior team. *No* limits to the technology.

McDonnell Douglas Helicopter Company and Bell Helicopter Textron have taken the U.S. Army's LHX challenge. Now, the most experienced fighting helicopter and crew-station development people will work together.

SuperTeam will join a heritage of leadership with the best minds in the business: McDonnell Aircraft Company, Honeywell, Hughes Aircraft Company, Sperry, and Texas Instruments.

Watch for the exciting reality: LHX — from a team of aviation leaders.

LHX

McDONNELL DOUGLAS HELICOPTER

SUPERTEAM

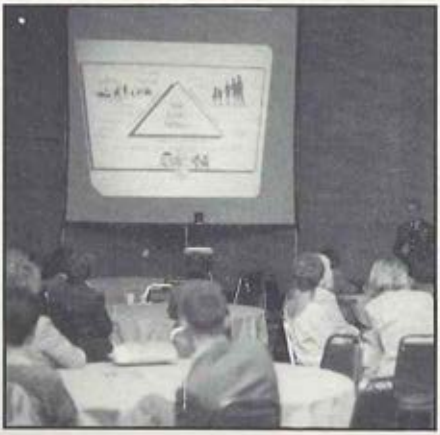
BELL HELICOPTER TEXTRON

More than 1,400 black tie dinner guests enjoyed cocktails in the Convention level foyer of the Marriott Marquis Hotel during the AAAA's Awards Banquet Reception.

A good place to rendezvous with friends while at the 1986 Convention proved to be the Georgia World Congress Center deck just outside of AAAA's Registration Office.

An exhibit hall photo taken at the 3M Stormscope exhibit shows the very popular Grumman balloon in the rear. The Spouses' Conference (below) had three speakers and a Q&A session.

A good many of AAAA's National Executive Board members and their spouses pose for a group photo. BELOW: President Putnam and his wife, Claudine, lead the Awards Banquet head table procession.



McClellan Award

CW4 Thomas M. Cloud

Overcoming major aviation safety challenges in establishing an AH-64 gunnery qualification program at Ft. Rucker, CW4 Cloud was presented the AAAA's 1985 *McClellan Aviation Safety Award* and is shown at the Association's April 11 Awards Luncheon receiving the *McClellan Plaque* from MG Ellis D. Parker, the Commanding General of the U.S. Army Aviation Center and Ft. Rucker, Ala. He's shown below accepting the CY 1985 Award.

His "outstanding technical and managerial ability, diplomacy, and willingness to lend assistance were absolutely critical to the safety effort and training program that eventually emerged."

Paul L. Hendrickson

As the USAAVSCOM Director of three inter-related, successful operational studies (the Contingency, War Reserve, and Annual Spare Part Programs), Hendrickson's efforts contributed substantially to the Army's vast flying hour program, and as a result, he was selected AAAA's *Dept. of the Army Civilian of the Year.* He's shown above receiving the Boeing Vertol-sponsored trophy from MG Orlando E. Gonzales, left, the CG of the U.S. Army Aviation System Command.

The award recipient cited the efforts of his AVSCOM co-workers and many others in accepting the accolade at the AAAA's 1986 Awards Luncheon.

DAC of the Year

C-17

"C" as in computerized

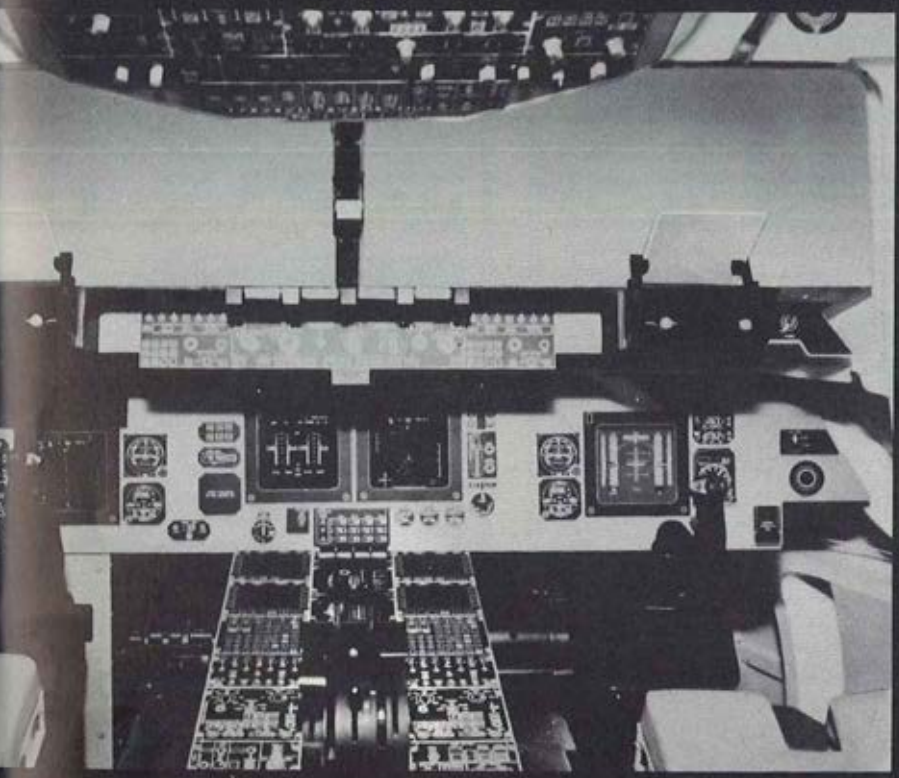
MODERN AIRLIFTER'S SYSTEMS CUT AIRCREW TO THREE.

Advanced avionics including head-up displays, combined communication/navigation controls, and multi-function CRT displays will reduce markedly C-17 pilot workload, compared with existing airlifters.

Equally important: With a basic crew of two pilots and one loadmaster, Air Force crew costs will drop dramatically compared with other airlift aircraft. And because ease of maintenance is engineered into the C-17, operations and support costs will also be reduced. The USAF Airlift Master Plan estimates a $16 billion savings over the life of the fleet compared to other airlift options.

The C-17 is now in development for first flight in 1990, when it will reach new highs for operational utility and new lows for cost of ownership.

MCDONNELL DOUGLAS



Aviation Soldier of Year

SP4 James A. Clement

Cited as an outstanding example of a soldier who combines the fundamentals of leadership, service, and honor, SP4 James A. Clement, right, above, receives AAAA's 1985 *"Aviation Soldier of the Year"* trophy from Lt. Gen. Louis C. Wagner, Deputy Chief of Staff for Research, Development and Acquisition, at the Awards Luncheon.

Clement, 3d from right, below, is shown holding the Bell-sponsored trophy with CW4 Kevin Campbell, President of AAAA's Northern Nights Chapter, as his parents, Mr. and Mrs. Clare Clement, right, of and his brother, Steve, and sister, Karen, left, share in his moment of achievement.

CW4 Roger W. Duprey

Called "the consummate Army Aviator" by his peers in the 101st Airborne Division, CW4 Duprey, a senior AH-1 SIP, is shown accepting the Association's *Aviator of the Year Award* in Atlanta, April 10. Some 78 members of the Division and their spouses were on hand when Duprey received the Sikorsky-sponsored trophy.

General Robert W. Sennewald, left, CG, USA FORSCOM, who made the award presentation, holds the coveted *Aviator Trophy* with the 1985 winner from the 229th Attack Helicopter Battalion, as Maj. Gen. Burton D. Patrick, CG of the 101st Airborne Division (AASLT) looks on from the right.

Army Aviator of Year

1986 Awards Banquet

⬆ President Putnam opens the 1986 Awards Banquet by introducing the head table guests shown seated below.

⬇ Some 1,425 AAAA members and guests and their spouses in attendance at the formal Marriott function.

219th Transportation Company (Aircraft Maintenance) (IS)

⬆ Recognized as one of the USAR's foremost aviation units, the 219th excelled in all categories (strength, retention, mission performance, etc.). Its CO, MAJ Gilbert E. Boen, 2d from the left above, receives the Lycoming-sponsored trophy from MG Carl H. McNair, Jr., Chief of Staff, USA TRADOC. MG William R. Berkman, far left, the Chief of Army Reserve, and 1SG Ronnie G. Greeling, the unit's senior NCO, looks on during the banquet ceremony.

⬇ 1SG Greeling, left, and MAJ Boen hold the new AAAA *Outstanding USAR Aviation Unit Award* trophy as other unit members and spouses join them.

USAR Unit of Year

ARNG Unit of Year

Co C, CSAC, 26th Avn Bn, Florida National Guard

⬆ 1SG Billy R. Cowart, left, and MG Robert F. Ensslin, Jr., TAG, FL-ARNG, hold the Avco Lycoming-sponsored *Outstanding ARNG Aviation Unit of the Year* trophy, with C Company attendees following the Awards Banquet.

⬇ Lt. Gen. Thedore G. Jenes, Jr., center, Deputy CG, USA FORSCOM, presents the trophy to 1SG Cowart and MAJ David J. Cook, the senior NCO and unit commander respectively. Cited as one of the best trained and maintained aviation units in the ARNG, Company C excelled in supporting the State of Florida in three hurricanes, a severe coastal storm, and six forest fires.

210th Combat Aviation Bn

⬆ A proud moment as the 210th's LTC Michael H. Abbott, left, and CSM Everett L. Grundon, right, hold the AAAA's *Outstanding Aviation Unit of the Year* trophy with GEN John R. Galvin, CINC, US Southern Command, and GEN Fred K. Mahaffey, CG, US Readiness Command. Operating in nine countries, elements of the 210th participated in exemplary fashion in many joint operations and disaster relief operations, including the Nevada Del Ruiz volcano disaster in Colombia.

⬇ Coming all the way from Panama, 210th CAB members and their spouses pose with the huge McDonnell-Douglas-sponsored silver trophy.

Army Unit of Year

1986 AAAA Membership Luncheon

AAAA Nat'l President Maj. Gen. George W. Putnam, Jr., models the US Precision Helicopter Team's baseball cap and souvenir T-Shirt prior to its Convention sale.

Membership Luncheon guests of the AAAA, 26 members of the US Precision Helicopter Team pose handsomely in their new AAAA-sponsored blazers and slacks.

COL Ernest F. Estes, right, Morning Calm Chapter President, receives the AAAA's *1985 Top Chapter* award from MG Putnam, a 7' x 7', four-color AAAA felt banner.

COL Jack E. Easton, right, SrVP, Aviation Center Chapter, waves the $1,200 Membership Enrollment first prize check presented to him by Maj. Gen. Story C. Stevems, left.

AAAA SrVP Maj. Gen. Story C. Stevens, left, hands COL Estes two Membership Enrollment checks ($1,000) for the Morning Calm Chapter's Member/Percentage gains.

AAAA Scholarship Foundation President MG Jack Klingenhagen, l., accepts a $5,000 Lindbergh Chapter check from BG Dick Stephenson, President, to create a funded *Frank S. Besson Memorial Scholarship.*

Monmouth Chapter VP Dick Steele, left, presents a $5,000 check to MG John L. Klingenhagen, AAAA Scholarship Foundation President, to establish a funded *Kenneth K. Kelly Memorial Scholarship.*

The U.S. Precision Helicopter Team takes a bow during the Membership Luncheon. AAAA ExVP Art Kesten frowns during his luncheon MC stint as three Chapter Presidents fail to show at their H.T. seats.

MG George S. Beatty, Jr., left, Army Aviation Museum Foundation President, accepts a $35,000 check from A.W. Pollard of Sikorsky Aircraft, as part of the $107,241 in donations received during the Convention.

The 26 Chapter Presidents at the AAAA's 1986 Membership Luncheon head table receive a solid round of applause.

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1986 Prof'l Sessions

Major General Ellis D. Parker, CG of the USA Aviation Center and Ft. Rucker, AL, opens the 1986 Prof'l Sessions as Chairman of the AAAA's Presentations Committee.

The Hon. Jay R. Sculley, Assistant Secretary of the Army (Research, Development and Acquisition), delivers the Keynote Address at the Convention's opening session.

CSM Tilden R. Kirkland, left, opens the '86 NCO Conference. LTG Louis C. Wagner, right, DCSRDA, provided Convention attendees with a current update on RDA activities.

LTG Benjamin F. Register, left, the DCSLOG, talked on "Sustaining to Fight" while BG Ronald K. Andreson, PM-LHX, briefed attendees at the '86 First Light Breakfast.

The AAAA's 1986 Professional Presentations drew an average of 800 attendees at each of the five professional sessions held at the three-day April 10-12 Convention.

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MG Fred E. Elam, CG, USATC and Commandant of USAALS, spoke on April 10.

The *1986 Aviation NCO Conference* was highlighted by a 1½-hour, seven-member NCO Panel chaired by CSM Tilden R. Kirkland, USAAVNC Command Sergeant Major.

BG Rudolph Ostovich III, Asst Comdt, USAAVNC, chaired a Friday, Apr. 11 panel.

An April 10 afternoon Panel Sessions included, l-r, CSM Kirkland; COL Walter H. Yates, Jr., APACHE Tng Bde; MG Fred E. Elam; and COL Terence Henry, USA Safety Center.

An April 11 morning panel included dignitaries from DA, l to r, MG John S. Crosby, ADCSPER; LTG Louis C. Wagner, DCSRDA; and LTG Benjamin F. Register, DCSLOG.

The Sat., April 12 panel moderator was MG Orlando E. Gonzales, CG, AVSCOM.

Ten Program and Project Managers headed by MG "Chuck' Drenz and BG "Andy" Andreson covered Armament, Air-to-Air, Air-to-Air Tests, Simulators, UH-60A, CH-47 Mod, AHIP, ASE, AAH, and the LHX in rapid fire 10-min. pitches and then sat on MG Gonzales' panel.

Air Traffic Control

Looking ahead in Radionavigation: What's the Plan?

ALEXANDRIA, VA. — Most of the radionavigation aids for both enroute and terminal operations have been in use for decades and while technology may have contributed to the increased reliability of some of these systems, the accuracies and inherent limitations have not been improved upon.

Both DOD and the FAA are on the verge of entering into the most dynamic growth of navigation aids and air traffic control procedures in history. New systems have been progressing through the developmental process and will be coming on line during the next 15 years.

Most of the systems with which we are now familiar, such as, ILS, VOR, TACAN, and PAR, will be replaced by a new generation of navaids offering quantum improvements over existing systems. The purpose of this article is to discuss some of the new navaids and what the plans are for the phase-in of new procedures and systems.

A hierarchy of plans has been developed by the FAA, DOD, and the Services and provides the basis for transition to the systems that will carry us well into the 21st century. From an ATC standpoint, the key document is the FAA's National Airspace System Plan (NASP), first published in 1981, with the latest update occurring in April, 1985.

The NASP has laid out some very ambitious goals for the modernization of the ATC facilities, including the consolidation of over 200 major facilities into 23 Area Control Facilities (ACFs) by the year 2000. The NASP is a very optimistic plan which will require an exceptionally effective systems engineering and integration program and substantial funding for many years in order to meet the stated goals and timetables.

The primary nav plan for DOD is the JCS Master Navigation Plan (MNP) which provides the means for JCS to validate POS/NAV requirements, identify performance shortfalls, highlight needed R&D efforts, and provide long-term projections of anticipated capabilities. MNP is the JCS implementation plan for DOD/DOT policy for future radionavigation systems mix.

A Report by Colonel William E. Trent

By now the typical Army aviator is probably asking "So what has all this got to do with me?" — A good question and one that deserves a specific answer! The plans discussed above lay the groundwork for a coordinated DOT/DOD effort to lead the civil/military aviation communities into the sophisticated hi-tech future of air traffic control and radionavigation which will make the navaids we have all learned to fly and trust as obsolete as the Grasshopper of World War II is to the AH-64 APACHE of today.

While there are numerous systems under development and evaluation, there are two specific navigation systems which I believe provide the greatest potential for ensuring success by the Army aviator on tomorrow's battlefield. These are the Microwave Landing System (MLS) and the Global Positioning System (GPS).

The DOD policy as announced in the JCS MNP calls for MLS to replace ILS/PAR and for GPS, once fully tested and certified, to replace VOR/DME, LORAN-C, OMEGA, TACAN, and TRANSIT in military aircraft and other platforms. Radio beacons will continue into the 21st century.

The MLS represents significant improvements over the ILS which has been the world's standard precision approach system since 1948. The MLS is currently being developed jointly by DOT, DOD and NASA and will be a common civil and military precision landing system. MLS will allow for curved, segmented, and straight in approaches when integrated with on-board navigation systems. It thus offers a wide range of approach options for airfields and heliports with obstructions or other needs for specific approach paths such as avoidance of noise sensitive areas.

Two basic systems will be

(ATC - Continued on Page 52)

Avionics

What's New in Army Aviation Electronics? ATHS is here!

FT. MONMOUTH, N.J. — One of our newest completed programs is the Automatic Target Handoff System (ATHS), a sophisticated communications processor which passes information in milliseconds. The ATHS has been in production since June, 1985, and the first 29 units have been delivered. You will be hearing more about the ATHS and if you haven't seen them in the field, you will soon. I want to take this opportunity to tell you about this little ten pound mission computer.

The ATHS is a mission processor with a digital data link capability that solves a wide range of tactical problems. This is one of the first steps toward combining information from a number of sensors and fusing it into accurate real time battle information the operator or field commander can use.

The ATHS can be operated from any 28 volt power source. It can be mounted in an aircraft, vehicle, boat or ship, or can be utilized in a suitcase version for use in tactical operations centers. All the ATHS operator requires is a display medium and a radio to be a full member of an ATHS net.

The ATHS connects to any military standard radio — VHF-AM, VHF-FM, UHF-AM, or HF — and sends information in digital form over airwaves using the voice channel of the radio. The benefits of digital burst-mode communications, as compared to voice, are improved accuracy/reliability, shortened on-air exposure, reduced susceptibility to jamming and locating, and increased net traffic density.

A Report by Colonel David S. Grieshop

What does ATHS do for you? When used in the airborne role, such as Scout/Attack team, the ATHS will maintain eight fire missions for standard or HELLFIRE ordinance. When firing HELLFIRE missiles the ATHS will compute and depict on a display the firing and launch data, separation angle, gun-target line, range and bearing to target, laser code, time of flight and countdown to missile impact. The crew member selects the launch modes and laser codes from the display unit being formatted by the ATHS.

The scout knows where it is via the on board aircraft doppler navigation unit. When the scout lases the target, the range/bearing to target is established from the known point of the aircraft, the ATHS "crunches the numbers" and the scout aircraft digitally passes this information to the attack aircraft.

Keep in mind that the attack team aircraft may never see each other during the attack and they have no need to talk to each other by voice. With the ATHS system, all of this is done in seconds.

The ATHS is currently being utilized on the OH-58D, the AH-64A, the CH-47, the UH-60A, and various ground systems. The ATHS is also being considered for use in the close air support role in the A-10, F-16, and the OV-10.

Enhancements to upgrade ATHS capabilities are in the works. You will be hearing more about these in future articles. We are entering a whole new era where voice communications will be the second choice to digital bursts of tactical or target information. Using these sophisticated systems is another applied technnology to fight outnumbered and win.

— COL David S. Grieshop
Cdr, U.S. Army Avionics
R & D Activity

Awards and Honors

AWARDS

AAAA CHAPTER—SELECTED "AVIATION SOLDIER / NCO OF THE MONTH"

FEBRUARY 1986 —
Aviation Center Chapter
SGT Grant M. Montgomery
Hanau Chapter
SP4 Marcus L. White
Taunus Chapter
SSG Alfred W. Alexander
Thunderhorse Chapter
SP4 Jeffrey W. Woodward

MARCH 1986 —
Aviation Center Chapter
SSG Dirk R. Tucker (NCO)
SP4 Marc A. Miles (Soldier)
Taunus Chapter
SSG Richard L. Chadbourne
Thunderhorse Chapter
PFC Darryl Vassar

APRIL 1986 —
Taunus Chapter
SGT Thomas I. Melo
Thunderhorse Chapter
PFC March C. Davis

HONORS

U.S. ARMY AVIATION CENTER FT. RUCKER, ALABAMA

★ Distinguished Graduate
+ Honor Graduate

MAR. 11, 1986 — Guest Speaker: COL Stanley E. Grett, President, U.S. Army Aviation Board, Ft. Rucker, AL.

Aviation WO Advanced Crs Class 86-2:
★ CW2 Bjorn K. Kullerud; + CW3 Bernard W. Fridd; CW2s Daniel G. Tupper; Darryl M. Reed; Byron C. Edmonds.

MAR. 12, 1986 — Guest Speaker: MG Norman W. Martell, Commander, 83d U.S. Army Reserve Command, Columbus, Ohio.

Officer RW Aviator Crs Class 85-34:
★ 1LT Bobby J. Tinkler, Jr.; + CPT Celia K. Schumacher (class leader); 1LT Anthony F. Fulco; 2LTs Benjamin D. Ayer; David A. Chapman.

Warrant Officer RW Aviator Class 85-33:
★ WO Doralee F. Buebel; + WOs Stephen J. Lemelin; William C. Lewis; Anne K. West; Clifford A. Branson.

MAR. 20, 1986 — Guest Speaker: COL Robert A. Wagg, Chief of Staff, U.S. Army Avn Systems Command, St. Louis, Missouri.

Warrant Officer Senior Course Class 86-1: Michael A. Pistacchio (class leader)

MAR. 26, 1986 — Guest Speaker: COL Wilfred A. Jackson (Retired), Manager, Baltimore-Washington Internat'l Airport.

Officer RW Aviator Crs Class 85-36:
★ CPT Robert J. Montgomery, Jr.; + 1LT Margaret M. Gordon; 2LT Larry W. McVay.

Warrant Officer RW Aviator Class 85-35:
★ WO Joseph A. Sharp; + WOs Mark A. Pratt; Steven C. Bogard; Craig S. Wagoner.

MAR. 27, 1986 — Guest Speaker: LTG Crosbie A. Saint, Commander, III Corps and Fort Hood, Fort Hood, Texas.

Aviation Officer Advanced Crs Class 86-1:
★ James M. Simmons; + CPTs Earl E. Knight; Jan P. Ithier; Gordon C. O'Neill; Albert E. Bauman, III.

APR. 23, 1986 — Guest Speaker: MG James E. Wagner, Dep. Commander for Mobilization, Military Traffic Mgmt Command, Falls Church, Virginia.

Officer Rotary Wing Aviator Class 85-40:
★ 1LT Andrew J. Mamrol; + 1LTs Van A. Joy; Thomas H. Bryant; William P. Shea; 2LT Pasquale J. Radice.

Warrant Officer RW Aviator Class 85-39:
★ WO Thomas G. Evans, Jr.; + WOs Darrell M. Wagner; Lawrence M. O'Neill; Kyle H. Thurston; Craig D. Bower.

Command & Staff

Major General Bruce R. Harris, as Commanding General, U.S. Army Signal Center Ft. Gordon, Georgia.

Brigadier General David J. Allen, as Asst. DC of S, 2d Infantry Division, APO S.F.

Brigadier General Thomas H. Harvey, Jr., Asst. Dep. Director for Politico-Military Affairs, J-5, OJCS, the Pentagon.

Brigadier General Caryl G. Marsh, as Asst. Deputy Chief for Operations, 101st Airborne Division, (AASLT), Ft. Campbell, KY.

Colonel (P) Lynn C. Hooper, as Deputy Director, Strategy, Plans and Policy, ODCSOPS, the Pentagon.

Colonel Wardell G. Baker, as ODCSLOG, USA Logistics Evaluation Agency, NCAD, New Cumberland, Pennsylvania.

Colonel J. Thomas Denney H., to 101st Airborne Division (AASLT) Ft. Campbell, KY

Colonel Jerry W. Ginn, Chief, Avn Division, DCSOPS, Hq USAREUR & 7th Army.

Colonel Willard E. Golding, to 12th Aviation Group, APO NY.

Colonel Michael B. Howe, Project Manager, CH-47 Helicopter Modernizn Program. USA AVSCOM, St. Louis, Missouri.

Colonel E. Kirby Lawson, as Commander, 2d Basic Training Brigade, Ft. Jackson, S.C.

Colonel Bert L. Rice, as Senior Army Advisor, Nevada ARNG.

Colonel Grover E. Snipes, as Director of International Logistics, USA AVSCOM.

LELAND WILHELM

Leland Wilhelm, Lt. Colonel Retired, 64, an Army Aviation veteran of 25 years, died February 24th at Lincoln General Memorial Hospital, Lincoln, Nebraska of an apparent heart attack while at the State Capitol. He was a candidate for the Nebraska State Senate from the 2nd District.

Wilhelm worked at Avco Lycoming for 14 years in international marketing and program management following his retirement from the Army.

He is survived by his wife, Margaret Wilhelm, RR 1, Box 69, Cedar Crest Farm, Dunbar, Nebraska, 68346.

Combat Developments

Update on Combat Development efforts at USAAVNC

FT. RUCKER, AL — Greetings! This month I want to continue to update you on selected efforts of the Directorate of Combat Developments.

AH-64B APACHE — The USAAVNC has been reviewing the possibility of improving the AH-64. These selected improvements will be oriented toward reducing operation and support cost while at the same time creating a significantly better reliability, availability, and maintainability status.

We are in the concept formulation stage with the draft Operational and Organizational (O&O) plan having been reviewed during a user and materiel developer Joint Working group (JWG) conducted between 4 and 6 March 86. The plan will now go to all major commands for worldwide staffing, and users' comments.

Our only goal in the DCD is to provide the field superior usable equipment. This will be followed with worldwide staffing of the Required Operational Capability (ROC) which will occur later this year. The ROC will establish the requirements needed to produce an AH-64B.

UH-60 BLACK HAWK — USAAVNC is currently working a UH-60 program that will double the present lift capability while improving the UH-60's reliability, availability, and maintainability (RAM) up to 50%. This requirement is contained in a draft "B" model ROC. The UH-60B draft O&O plan and ROC are in revision based on comments received from the field during worldwide staffing.

The O&O plan and ROC are expected to be briefed at TRADOC during June of this year. We are working towards providing a decision brief to the Army leadership between now and mid-July, 1986. The purpose of the UH-60 improvement brief is two-fold: Request an increased buy of around 700 more UH-60 aircraft, and propose the "UH-60B" as an aircraft that will reduce O&S cost while providing improved RAM and obtain a real increase in combat capability.

A Report by Colonel Frank H. Mayer

AN/TPN-18 and AN/TSQ-71B — Planning is ongoing to product improve the Ground-controlled Approach (GCA) system, which has been long overdue for attention. The improvements include the AN/TSQ-71B operations shelter and its component radar system oriented towards better reliability, availability and maintainability of the entire system. This improvement will extend the system's life until the mid-1990s when it will be replaced by a dual system of tying together the Army microwave landing system and the global positioning system. The improvement to the GCA was presented to the Project Control Board at AVRADA during the week of 22 April 1986.

Special Electronic Mission Aircraft (SEMA) — On 2 April 1986, a General Officer In-Process Review of SEMA was attended by a representative of the Aviation Center. As a result of that meeting, DCD is taking the lead to develop an O&O plan for a Corps level airborne platform to perform Signal Intelligence (SIGINT) collection and incorporate improved survivability features. The General Officers in attendance felt that the A212K study support the above requirement and HQDA would support the initiation of a new SEMA program.

This development effort will not include a replacement to the OV-1D MOHAWK since the USA/USAF JSTARS initiative calls for the Air Force to provide Imagery Intelligence (IMINT) to the ground commander.

Air Traffic Control — An implementation plan supporting the December, 1985, Army decision to transfer Air Traffic Center (ATC) functions to the Aviation Branch for proponency, was approved on 18 March 1986 at HQDA. DCD proponency officially moved to the Aviation Center on 31 March 1986 with the plan calling for total transfer including personnel and equipment to be accomplished by 1 October 1986. Currently everything appears to be on track and we are looking

(DCD - Continued on Page 55)

Force Intergration

"Attack Business" is booming at the five sided foxhole!

WASHINGTON, D.C. — Fortunes could be made over the next five years if stock in the Army's attack helicopter business were offered on the New York Stock Exchange.

Our attack helicopter force structure is both growing and modernizing. We'll see new corps attack battalions activating over the next four years providing the corps a significant increase in combat capability. The Army Reserve joins the attack structure in the near future by activating four corps attack helicopter battalions and the divisional attack battalion for the programmed 6th Infantry Division. The Army National Guard is receiving significant numbers of AH-1S COBRAs under the Army's Reserve Components Modernization Program.

The most publicized attack news is the fielding of the AH-64 APACHE. Fielding will result in 31 Regular Army attack battalions, one Regular Army Air Cavalry Squadron, and two Army National Guard attack battalions. All 34 APACHE battalions will be trained as a unit at Ft. Hood, Texas, under the single station fielding concept. Units will undergo an intensive 90 day unit training period prior to deployment to its assigned division or corps.

Another unique aspect of APACHE battalion fielding is total package/unit materiel fielding (TP/UMF). All resources to include personnel, equipment, repair parts, ammunition, etc. are provided as a package.

The planning and initial execution of fielding the APACHE proceeds as a TOTAL team effort. This team meets on a regular basis to insure resourcing requirements are being filled as scheduled. The team reports quarterly to a General Officer Steering Committee. The support of this committee and the Army's senior leadership are resulting in the near 100% fill of equipment and personnel.

A Report by Major (P) Gerald D. Saltness

The conversion of current AH-1S attack battalions to AH-64 battalions is only half of the good news. The other "not-so-evident" good news is what is happening to the COBRA peculiar equipment coming out of converting units. AVSCOM's TP/UMF office and the COBRA PM office have established teams to insure the COBRA peculiar PLL/ASLs, test measurement, and diagnostic equipment, tools, and aircraft are properly accounted for and made ready for issue to another unit.

This equipment is refurbished, packaged, and shipped to Red River Army Depot (RRAD). RRAD serves as the key staging point for both new AH-64 units and modernizing AH-1S units. All AH-1S are being sent through depots, post maintenance facilities, or National Guard maintenance facilities prior to redistribution. Redistribution of the aircraft is based on mission requirements and unit priority listing.

Divisions can expect AH-1S model upgrades and fleet purification. Fleet model purification will reduce maintenance support requirements, training requirements, and the proliferation of ammunition requirements in those divisions that currently have two or more different models of AH-1S aircraft.

Some near term goals of the attack desk of ODCSOPS Aviation Division will be to establish a team similar to the APACHE team to monitor and execute a successful Reserve Component attack modernization program. Our ammunition programs supporting aviation gunnery need a close review. We have got to insure our gunnery manuals, unit training guidelines, training ammunition regulations, ammunition procurement objectives all fold together into a solid defendable program. The number one priority will continue to be the successful fielding of the AH-64.

Whenever you aviators, especially attack guys, pass through the DC area please stop by our hole-in-the-wall and let us know what's on your mind. If you're wearing muddy boots, we'll even buy you a cup of coffee. We're in room 1A873 of the five sided foxhole.

— MAJ (P) Gerald D. Saltness
FISO for AH-1 and AH-64
Avn Div, ODCSOPS, DA

"The next war." Consider the threat those words imply. Imagine men in machines, pitted against one another on a battlefield where nuclear, biological, and chemical weapons are used.

Where darkness and rain are not havens, but are exploited to launch attack. Where new air-to-air and surface-to-air threats await Army Aviation.

The threat is real. And it is growing. As Soviet Hind helicopters operate unopposed in armed conflict today. And the Hokum and Havoc, still on the drawing boards, progress inexorably toward reality.

It is the future. It is here. And Army Aviation knows what it needs to answer the call.

"We must hold our minds alert and receptive to the application of unglimpsed methods and weapons. ***The next war will be won in the future, not in the past.*** *We must go on, or we will go under."*

General Douglas MacArthur
1931

LHX. Its success will depend not only on the imagination of designers or the integration of complex systems. But on the ability of businessmen to manage the technologies and systems that will fulfill the Army's requirements. To apply these technologies intelligently. And deliver a highly lethal aircraft of awesome capability. On time. On budget.

One team can do it. Boeing Sikorsky. Our track record proves it. The BLACK HAWK and CH-47D helicopter programs. Demonstrations that low-cost solutions can successfully fulfill high technology needs. Models of excellence and efficiency that have earned multi-year contracts for both companies.

LHX is a formidable task. And an important one. But Boeing Sikorsky is up to the challenge. Because we have the vision to see it. And the capability to see it through.

Bill Wallis, Deputy Director LHX Program (left); Lou Cotton, Director LHX Program

Answering the call.

BOEING SIKORSKY
THE FIRST TEAM FOR LHX

Hardware

Update: WSM for Aviation Ground Support Equipment

ST. LOUIS, MO. — The Office of the Weapon Systems Manager (WSM) for Aviation Ground Support Equipment (AGSE) came into being in March, 1984. From the very beginning it was clear that each and every member was challenged, and that that success in acquiring AGSE for distribution to Army claimants would hinge on defining accurately the Army's needs for individual items.

The Basis of Acquisition Program (BOAP) was created to define those needs, and has been endorsed by AMC and DA as an effective management tool. This program reached a major milestone with the completion of a world-wide inventory of 38 key AGSE line item numbers (LIN) in December, 1985, and the production of "Flash BOAP" (computerized) Reports showing current AGSE shortages by-LIN and by-Unit.

These Reports were reviewed in AMC and in DA, resulting in guidance to designate 30 "top priority" AGSE items which are short, their shortage quantities, and budget requirements for their acquisition. This has been done. The Flash BOAP Reports have also been used to recommend selective equipment transfers to the Army MACOMs from "excess" to "shortage" Units.

A parallel effort to develop a "Living BOAP" based on automated data sources — the Total Army Equipment Distribution Program (TAEDP) and REQ-VAL (requisition-validation) — has also progressed well, and a programming effort has been initiated to generate Unit Needs and Items Acquisition Lists for Army Aviation.

A Report by Valentin G. Berger

The WSM has continued to manage the Aviation Ground Power Unit (AGPU) toward fielding, deploying AGPUs to Ft. Hood in support of the APACHE on time, with unit operators and maintenance personnel trained, a contractor representative on site, and draft manuals on hand.

A Follow-on-Evaluation of the Self-Propelled Elevating Maintenance Stand (SPEMS) is progressing at this time, with 5 units in play at Hunter AAF, and final preparation for the logistical support of the SPEMS will proceed in April, 1986.

During 1Q86, the WSM has succeeded in having a number of D5D Hydraulic Test Stands stored at Tooele Army Depot made serviceable and issued to units supporting the fielding of CH-47Ds. We have also managed an active program of overhaul for VIBREX units, and has participated actively in an ongoing Fielded Systems Review of AGSE.

The Office of the WSM has contributed to activities leading toward the publication of an authorized list of test, measurement, and diagnostic equipment (TMDE) and to the management of aviation test program sets (TPS), and is continuing an effort to prepare a 5-year plan for TMDE development. The key to future aviation TMDE/TPS and automatic test equipment (ATE) centralized management is an ongoing effort to establish that mission element within AVSCOM and to design and put in place organizations and resources that will do this vital job effectively.

It's very heartening to know that the Army's senior leadership recognizes that effective AGSE is absolutely essential to the mission readiness of Army Aviation. The allocation of adequate resources for the purchase of equipment, and the development and acquisition of new itlems that truly fulfill the users' needs, are closer to reality. It is clear, however, that every dollar made available must be spent with greatest care, and only for critical materiel items assigned to aviation units high on DA's Materiel Priority List.

We look forward toward being able to say "yes" to the users' requests for AGSE, rather than "no", and toward knowing that we are sending "good stuff" out to the field.

— Valentin C. Berger
WSM for AGSE
USA AVSCOM

Aviation Logisitics School is providing state-of-the-art AGSE

FT. EUSTIS, VA. — Acquisition of new aviation hardware normally focuses on the need to meet the threat with heavily armed attack helicopters; sleek, swift, and capable scout aircraft; and durable, efficient, utility and cargo aircraft.

Although not much publicity is given to the required ancillary ground support equipment necessary to support Army aircraft, much study, development, and effort goes into their acquisition as well.

A Report by Lt. Colonel Gerald P. Kokenes

The U.S. Army Aviation Logistics School (USAALS) is responsible to the aviation proponent for the development and acquisition of all aviation ground support equipment. Systems that provide maintenance and support of aircraft must provide the ability to: move aircraft in and around maintenance areas; remove and replace aircraft components; provide hydraulic, compressed air, and AC and DC electric current for starting aircraft and for aircraft fault and troubleshooting procedures.

At a time when Army Aviation modernization is reaching a peak, the USAALS is providing the following state-of-the-art ground support hardware to our aviation units:

Aviation Ground Power Unit (AGPU) — Developed to fill the requirement for pneumatic starting power for the BLACK HAWK and APACHE and separate or simultaneous electrical and hydraulic power for maintenance operations for all Army aircraft, the AGPU is a modular, lightweight, self-powered turbine unit that will be fielded with the APACHE, and unit tested at Ft. Campbell later this year. It is a durable machine and will provide effective power for starting aircraft and for prolonged maintenance operations.

10KW Generator — Replacing the 7.5 KW generator in all aviation units will be the 10KW Generator. This powerful turbine powered generator will provide DC power for starting and maintenance operations in support of all aircraft. The 10KW generator is built by Tiernay Turbine and will be unit tested at Ft. Stewart later this year and fielded to operational units next year.

Self-Propelled Crane Aircraft Maintenance and Positioning (SCAMP) — To fulfill the need to lift aircraft components during maintenance and to reposition and tow aircraft, the SCAMP can be operated by an aircraft mechanic and can lift engines, transmissions, and position aircraft in hangars and over rough terrain. The SCAMP is being fielded now to AVUM and AVIM units and will replace the second 5-ton wrecker in AVIM units.

Aircraft Decontamination, Deicing, and Cleaning System (ADDCS) — The need to decontaminate aircraft and components, and to clean and de-ice aircraft, rotor blades, and wings, has led to the development of ADDCS — a lightweight, mobile system designed for use under field conditions. The unit consists of a heater, pump, motor, hoses, and spraying nozzles for dispensing appropriate solutions. Efforts are underway to expeditiously develop and field the ADDCS.

New Aircraft Tool Set (NATS) — The need for a lighter, more mobile aircraft mechanics tool kit has led to the development of NATS. The new tool set design will improve tool accountability and will reduce the occurrence of FOD to aircraft due to lost tools. NATS will be tailored to specific model and type of aircraft in accordance with maintenance procedures and aircraft density and will reduce tool inventory by 50% and the number of tool sets in the Army by 25%.

The key to maintaining wartime aircraft availability is skilled maintainers and the right support equipment and USAALS is providing the essential elements required. The systems described above are a few of the materiel projects to be fielded in the near future. We are continuing developmental efforts for support equipment which will enhance aircraft availability and flexibility to the aviation commander.

— LTC Gerald P. Kokenes
Director of Combat Developments, USAALS

Industry

ARPRO: A major player in the acquisition process

CULVER CITY, CA; MESA, AZ; YUMA, AZ — You'll note that we're reporting from three locations these days! Let me begin by recognizing the very informative article from the BELL Army Plant Representative Office (ARPRO) published in the January issue of ARMY AVIATION. It described the similar roles, missions, and organizations of AVSCOM's three ARPROs, so I won't dwell on those subjects.

Suffice to say, the ARPROs are DOD's representation on site — an interesting assignment made extremely challenging given the dynamics of today's evolving procurement world.

Today, McDonnell Douglas Helicopter Company (MDHC) — formerly Hughes Helicopters, Inc. — is involved in a major relocation of a large segment of its workforce to their new facilities in Mesa, Arizona. By year's end, the majority of all production efforts on the APACHE Helicopter will be accomplished at the Mesa facility. We are still doing some test flying at Yuma — albeit nothing like the activity seen there in 1985.

This move has caused us to reorganize and shift major functional areas of responsibility to Mesa to keep pace with the Contractor whose Culver City facility will be reduced essentially to the manufacture of its Ordnance products, commercial helicopters, and naturally, APACHE production/spare parts by early FY87.

The ARPRO-MDHC Command Office will be relocated to Mesa this summer with a Branch Office remaining at Culver City (mostly Quality Assurance personnel) to provide appropriate contract administration services. The transition has not been without some problems and all concerned look forward to a more stable situation before the end of the calendar year.

So much for who we are, where we are, and where we're going — what's going on?

One of our more glamorous yet terribly important responsibilities is that of acceptance of the APACHE aircraft for the Army at the Mesa facility. This process (flight test-acceptance) begins with a thorough evaluation of all of the aircraft's manufacturing documentation by an Army test pilot, a Quality Assurance Specialist, and an Engineer.

Once the aircraft documentation has been accepted, the aircraft is released for Army test flight. The acceptance test flight "process" has been taking an average of 5.6 hours of flight time utilizing four to five sorties and spanning a threee to five day time frame. We have flight tested and accepted 76 APACHEs for the Army to date. Of those, six were flown to Ft. Hood as part of the First Unit Equipped (FUE) operation.

Unfortunately, as of this writing, the process was interrupted by the fleet's grounding for a mechanical failure. Pending resolution of same, an additional 16 APACHEs will be flown to Ft. Hood to round out the FUE authorization.

Another tough assignment, directed by none other than the Secretary of Defense, is the task of monitoring the production performance of the major subcontractors for the APACHE. This is no small feat when you consider that there are more than 35 "major" subcontractors involved in the manufacturing process with upwards of 400 other subcontractors not considered in the "major" subcontractor category (determined by dollar value of contracts) who are dealt with through Quality Assurance channels as well.

A Report by Colonel Joseph R. Campbell, III

Performance surveillance of these subcontractors presented three problems. First, how do you monitor individual manufacturers of diverse items from airframes and transmissions to navigation electronics and fire control computers? Secondly, these subcontractors are geographically dispersed throughout the United States and Canada. Lastly, how do you ensure an independent evaluation of the individual subcontractor's

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Performance and capabilities?

The answers to all three questions resided in accessing the many skills and abilities available within the Defense Logistics Agency (DLA). By requesting support through production surveillance delegations to the local cognizant Defense Contract Administration Services Management Area (DCASMA), we were able to utilize trained and qualified personnel familiar with each individual manufacturer, its product line, its past and present performance and its future capabilities.

But, most important, the APACHE Program has access to someone who is available at each subcontractor location who can give a quick and accurate assessment of actual or potential delays which could impact the production line — Thank you, Defense Logistics Agency!

The editor said "600 words or less" so I'll defer further comments until another time. If you'd like to hear more from us on such murky subjects as spares pricing/negoations, DCAA/AVSCOM interface, production surveillance, the quality assurance role in plant activities, and Contractor/Government relationships, then keep those cards and letters coming!

Regards from our men and women of ARPRO-West.

—COL Joseph R. Campbell, III
Cdr, ARPRO, McDonnell Douglas Helicopter Co.

International

The 1986 Precision Helicopter Team: Closing The Gap!

FT. RUCKER, ALA. — The 1986 United States Precision Helicopter Team has been in training since the end of the National Championships in February of this year.

There have been major improvements in the skills of the aviators involved as a direct reflection of the intensity of their training. It hasn't been easy, or even predictable, but the character of the team has been forged from sturdy stuff.

The purpose of this article is to discuss, briefly, our training philosophy, the final competition team selection process, and the progress we've made toward winning the 1986 World Helicopter Championship for the United States.

Training Philosophy — Training on the team has been shaped in the mold of its Commander, **LTC Robert E. Harry,** and has several focal points. First of all, the team is trained under conditions which are designed to optimize the stress placed on the individual competitor in order to prepare him for the stress which will be present at the championships.

This is accomplished by many means: command emphasis on every event; command interest in every mistake; command presence on the course. The commander is present for and participates in every team function, from PT to mission brief. He often appears at an aircraft and goes along for the event, and has made that opportunity available to any of the team's support staff. He has pulled every crew in on several occasions to discuss their progress or lack of it.

Second, flexibility has been built into the program, and the most common phrase heard from the team when something doesn't go as planned is "take what the organizer gives you." It's a given that whatever can go wrong, will go wrong. So, on occasion, the team will run a different course than they expect; or a schedule change will be made on the morning of the mission brief; or instead the commander will take the team out on the Air Assault School confidence course.

Third, physical fitness is considered essential to the team, and we run about 6 miles (more or less, depending on the day) every Monday, Wednesday and Friday. Tuesday and Thursday we meet for warm-up and then do our own PT. We receive regular PT tests, and are expected to show improvement on each one.

The commander's policy letter on PT states the following

purposes for the physical training we receive:

- Builds espirit de corps and team camaraderie
- Improves individual stamina and physical conditioning
- Is a vehicle for stress release
- Is a vehicle by which to build mental toughness
- Is a measure of individual self discipline
- Is a measure of individual self motivation
- Is a measure of individual tenacity
- Is a source of team pride

Competition Team Selection — of the eight teams currently selected to train up for the World Competition, only five will be allowed to compete. The program established to train them up to that level of expertise had to contain a selection criteria by which to pick the competing teams.

The training is designed to run in two parts, designated Pre-Deployment and Post-Deployment. The Pre-Deployment portion consists of three phases, and allows the teams to develop every new idea they have which might improve their performance.

Phase One counted for 20% of the Pre-Deployment Score. It called for five graded days per week, one of which would go into the average scores used to select which five teams will be competing for the United States in the World Helicopter Championships. In this phase, the graded daily portion counted for 30% of the Phase One Score. Then a graded flyoff competition was held which counted for 70% of the Phase One score. This Phase allowed experimentation, exchange of ideas and improvement on every innovation.

Phase Two counted for 30% of the Pre-Deployment Score. It called for five graded days per week, of which three would be averaged into the final Phase Two score. The grade average counted for 40% of this phase score, and the fly-off at the end of Phase Two counted for 60%. The Phase ended on 25 April 1986. Innovation continued during this phase, with a surprising amount of experimentation, and, naturally, some good natured commentary overbotched scores.

A Report by CW3 E. Daniel Kingsley

Phase Three will count for 50% of the Pre-Deployment Score. It consists of 19 training days, and every one counts for the average score. It is designed to stress consistancy, and to measure that part of the crew character. The daily record will count 50% and the fly-off will count for 50%.

In the Post-Deployment Phase, the crews will train for nine days in England. Then there will be a fly-off which will be graded, and the score will be averaged with the combined Pre-Deployment score in order to determine the final Crew Grade, and the team standing.

With 50% of the weight of the entire train-up period on this score, it is easily the most important fly-off of all.

Progress toward Victory —There is a great deal of pressure in this business, both for the staff and the competitors. The teams get along well, however, and exchange ideas freely. They usually hollar at the support group more than at each other. And they are good — very, very good — at doing these tasks.

How do we measure good? Recently, as an example, we flew a long navigation course in which all the crews crossed the finish line 40 to 50 seconds late. All the competitors gathered at the debrief and began to beat up on the operations officer (officially, we call this a "protest period") because he hadn't realized that the airport is 500 meters off its plotted location!

Or how about the write-up (an after flight comment) in a log book the other day which said (seriously) "Clock Inop. Loses 4 seconds per 24 hours". We (the staff) all sort of laugh it off. Trying ot challenge these guys is a full time job, and I have found that none of the staff will want to do it again.

Well, until at least next year...

— CW3 E. Daniel Kingsley
Safety Officer, U.S. Precision Helicopter Team

A strong partner: The German Army Aviation Branch

BUECKEBURG, FRG — The position of Liaison Officer to the German Flight School has existed since 1977. I am the third American aviator in this assignment, which requires earning a German Class II pilots license and flight wings.

The German Army Aviation School is located at Bueckeburg in the northern part of West Germany, situated 50 km west of Hanover. The surrounding county is called Schaumburg, a former principality, which is rich in beauty and military tradition.

The Aviation School was first activated in 1957 at Mendig, and later moved to Bueckeburg in 1960. Since Army Aviation had not existed in Germany before, the school was modeled after Ft. Rucker. This institution is responsible for all training from Private to Lieutenant Colonel in the German Army Aviation Branch.

To carry out its mission, the Army Aviation School is organized into the School Staff, Department A, Department B, Maintenance Department and the Combat Development Agency.

Department A conducts all flight and pre-flight training. Its mission is to produce helicopter pilots for the German Army. Pre-flight training lasts for six months. During this period, students must learn English. Flight instruction is provided through a variety of courses differing in length and purpose.

The Initial Entry Helicopter Pilot Course consists of 100 hours of basic flight with academic instruction. Upon successful completion the student is awarded the Army Aviator Wings and the Class II Military Pilots License.

In Phase II pilots receive 77 additional hours in the Alouette II. They learn to fly tactically and are prepared for assignment to an Observation and Liaison Squadron.

A Report by Lt. Colonel Thomas C. Pool

Based on aptitude and the needs of the service, Aviators may be transitioned into the BO-105 or Bell UH-1. Each transition course is followed by further tactics, to prepare the pilot for assignment to a respective unit. Additional post graduate courses similar to Ft. Rucker's are also taught. Helicopters assigned include: Alouette II, BO-105 Liaison and Anti-Tank, UH-1 and CH-53. Simulators are available for the UH-1 and the CH-53.

Military courses not involving flying are the responsibility of Department B. Career progression courses, such as basic training, advanced individual training, NCO and officer candidate courses are taught here. Advanced individual training at the School is aimed at soldiers who enlist for an extended period of time beyond the mandatory 15 months for draftees. Department B also teaches aircraft mechanics and flight operations personnel.

The maintenance department is responsible for the care and repair of the school's helicopters. The department is divided into an AVUM and AVIM division, similar to the U.S. Army. The AVIM division consists predominantly of civilian mechanics, while AVUM is all military.

The Combat Developments Agency (Spezialstab "ATV"), a standard element of all German Army Schools, is responsible for analyzing pertinent literature, conducting field tests, and formulating Army Aviation doctrine. The Army Aviation Test Squadron, specifically organized as a test unit, is located at Celle, 40 km NE of Hanover. The agency also writes all German Army Regulations and field Manuals pertaining to Aviation, and carries out special assignments for the Chief of Army Aviation Branch. This single agency incorporates the functions of several departments at Ft. Rucker.

The German Aviation School is working on the Advanced Anti-Tank helicopter under development jointly with the French army. With the largest fleet of helicopters of any European member of NATO, the Aviation Branch of the German Army is progressive, innovative and a strong military partner to the United States Army.

— LTC Thomas C. Pool
USAAVNC Liaison Officer
German Army Avn School

Liaison

Army Aviation and the Fiscal Year 1987 Budget

WASHINGTON, D.C. — At this time each year, Army Aviation focuses on the Procurement and Research and Development Budget requests submitted to the Congress as part of the President's Budget. While, in the broadest sense, this year is no different than previous years, the Gramm-Rudman-Hollings amendment with its deficit reduction goal adds a unique perspective.

For Fiscal Year 1987 the Administration requested $312 billion for Defense of which $80.6 billion or about 26% is for the Army. In view of current political and national interest in reducing the annual budget deficit, and in view of past experience on Congressional cuts, the FY 1987 budget request will surely be reduced.

Before looking at projections for this fiscal year, let's look at what makes up the Army Aviation request. In the FY 1987 Army Budget, Aviation continues as a "big-ticket" item in both Procurement and Research and Development.

In Procurement, the request is for $3.3 billion. Included in this amount are funds to: (1) modernize 48 more CH-47D CHINOOKs and 48 OH-58D AHIPs and (2) procure 144 AH-64 APACHEs, 78 UH-60 BLACK HAWKs, and 18 EH-60 QUICKFIX helicopters.

Also included are funds to continue modernizing the OV-1 and to continue C-Flex and C-Nite improvements to the AH-1 COBRAs. Additionally, FY 1987 is the first year in which procurement dollars are requested to buy the Air-to-Air Stinger systems — 74 for the AHIP — and the AH-64s Automatic Target Hand-off System (ATHS).

In the less glamorous, but equally important, area of support equipment, the FY 1987 request continues procurement of ANVS-6 Night Vision Goggles, AH-64 Chemical Protective Masks, and 3 UH-60 Flight Simulators. Procurement also begins for the new AN/PRC-112 Survival Radio and the Helicopter Oxygen System, and modernization of the old AN/PRC-90 survial radio to the more reliable AN/PRC 90-1.

A Report by Major General Richard D. Kenyon

In Army Aviation research and development, the most important program is clearly LHX. This program, which in its present format will be the Army's largest ever, is our most extensive and most controversial.

In 1986, Congress reduced the LHX ARTI funding by $30 million, forcing the Army leadership to delay plans for entering full scale development by one year. This year's request therefore is for $45 million which allows completion of risk reduction work originally planned for completion in FY 1986.

Should these funds be authorized and appropriated by Congress, full-scale development of the LHX air vehicle and mission equipment package will start in early FY 1988.

Closely tied to LHX is the T-800 Engine effort. For FY 1987, $111 million is requested to continue development of this high technology, fuel efficient, and performance-oriented engine. Other research and development work requested for FY 1987 includes aircraft weapons, Aviation Life Support Equipment, Special Operations Forces aircraft and, in the training simulation area, continued development of the Aviation Combined Arms Team Trainer (ACATT).

What are the prospects for winning approval of the entire package? Realistically, even "amateur" Congress watchers realizes that budget cuts are inevitable. The uncertainty is the depth and breadth of cuts.

Everyone realizes the FY 1987 Budget faces a formidable challenge for both DOD and the Congress because of the Gramm-Rudman-Hollings Amendment. Under the law, the 1987 National Budget Deficit cannot exceed $144 billion. Excesses above that mark invoke "across-the-board" reductions in all government departments and programs.

What's the impact? Will the 1987 Budget meet legal requirements for deficit reduc-

(Liaison - Cont'd on Page 55)

Maintenance

USAALS: Update on Maintenance and Logisitics Support

FT. EUSTIS, VA. — Training is still big business at the Aviation Logistics School. However, the combat developments side of the school is also very busy working in the area of logistical support for aviation.

A Report by Colonel Ronald L. Bellows

One of our major thrusts at the School is directed toward productivity of aviation units, that is getting more flying hours out of our fleet without major increases in support. Our overall approach to this problem is to work smarter and to organize better, more in-line with today's technology. This effort, being worked as part of a team involving the AMC community, also supports the Army goal of reducing operations and support costs for major systems by 50% by 1991.

Progressive Phased Maintenance, Predictive Aircraft Maintenance System, and Combat Maintenance/Battle Damage Repair are three programs underway in this area.

Progressive Phased Maintenance is directed toward minimizing aircraft downtime due to scheduled maintenance. The intent is to inspect smarter — eliminate redundancies and over-inspection, permit more flexibility as to when items are inspected, minimize deferred maintenance, and use automation to simplify management. The system is installed, in part, on the CH-47D; it will be tested on the UH-60, OH-58 and AH-1 this fall within the 101st Air Assault Division at Ft. Campbell.

The Predictive Aircraft Maintenance System, on the other hand, is directed toward minimizing aircraft downtime due to unscheduled maintenance. The system incorporates collection and analysis of data on specific aircraft components and subsystems which will be used to show where performance or condition is deteriorating, and maintenance action is required.

On-board data recorders, checking such things as vibration levels, temperatures, material strain; data analysis; expert systems and artificial intelligence are all elements of this system. Right now the School is developing the organizational and operational plan for this system.

Combat Maintenance/Battle Damage Repair involves the assessment and quick-fix of damage sustained in combat by enemy fire. The intent is to get the aircraft back in the air, in a safe mission-capable condition, as quickly as possible, with more permanent repairs planned for a period when mission demands are less critical.

We did this in Vietnam, and even Grenada, but we did it by the seat-of-our-pants. We're now going to engineer it for safety and maintenance, develop the repair hardware kits, establish criteria, and then provide the necessary training to our maintenance personnel.

All three of these programs support the goal of increasing wartime availability of our aircraft and their systems. The need to get the most out of exceptionally capable, but also very complex and very expensive, aircraft weapons systems is at the top of our list of priorities at the Aviation Logistics School.

While the above programs are oriented on aircraft themselves, and the attempt to make them more available, we also recognize that the ability of an aviation unit to effectively do its combat mission is dependent on a lot of other factors. Logistics support is one such factor, a key combat multiplier.

The concepts of employment for the divisional combat Aviation Brigade are now fairly well defined, much more so than in 1983-84 when aviation was becoming a branch. The concepts for support, however, are not as clearly defined and are not widely accepted in the field. A review of these concepts at the Aviation Brigade Commanders Conference in November, 1985, showed that, to a great extent, each division has developed its own support concepts.

At the Aviation Logistics School we recognize a need

(Continued on Page 55)

Operations

Combined Arms Team Victory in a Laser War at NTC

FORT BRAGG, N.C. — When you think of the 82d Airborne Division, you think of disciplined and hardened paratroopers who hit the "silk" at a moment's notice in support of an 18 hour, no-notice, worldwide deployment mission.

Once these paratroopers have rolled their chutes and secured the ISB (Initial Staging Base), Army Aviation plays a big part in the ability of the Division to project its combat power. The Division counts heavily on the air mobility provided by its UH-60 BLACK HAWKs and the firepower of its AH-1S COBRAs to meet every deployment test.

Both trooper and aviator were put to the test when the 82d Airborne Division deployed on its first-ever rotation to the harsh desert training environment of the National Training Center and the no nonsense welcome of the OPFOR Motorized Rifle Regiment.

Operation "Strike Hold" sent a Division Task Force to NTC built around the 1st Battalion, 504th Infantry, along with aviation, engineers, artillery, and air defense artillery assets from the Division. The task force also counted heavily on the TOW firing attack helicopters from Company D, 82d Combat Aviation Battalion, and Alpha Troop, 1st Squadron/17th Cavalry (configured to fight with MILES/AGES — Multiple Integrated Laser Engagement System — Air Ground Engagement System) to counter the armor heavy OPFOR threat.

The integration of MILES, along with a computerized monitoring system, enabled the NTC controllers to accurately monitor, track, and record the actions of almost every key weapon system on the battlefield. After every battle, key personnel from the Task Force and the OPFOR were assembled with NTC controllers to analyze the battle results. It became apparent from the first after action review through to the final report that the key to the 82d Air-

Jump FAARP teams load aboard CH-47C's and prepare to move forward at the start of the Force-on-Force Battle.

borne Division's success was the total integration of all division's assets in a well orchestrated combined arms effort.

Army Aviation was key to this success. It not only provided the bulk of the infantry's tactical mobility, but also became the task force's most flexible, lethal anti-armor capability.

During the final force-on-force battle (a deliberate defense against OPFOR attack consisting of 174 tank and armor vehicles) the COBRA and Scout assets of the 1st/17th and D Company were combined into a single tank killing force.

A Report by Major Roger E. McCauley

OH-58C Aeroscouts, flying in some very tricky wind conditions, were instrumental in directing the gunship fires, aiding in Command and Control, directing JAAT (Joint Air Attack Team) operations with A-10's, and calling in artillery.

At one point in the battle, Aeroscouts were able to confirm the movement of an OPFOR armor column and fire a pre-planned FASCAM (Family of Scatterable Mines) mission which helped channelize the enemy and thwart an OPFOR attempt to flank friendly forces.

The aviation task force dealt with its logistical support problems quite effectively by establishing its main FARRP (Forward Area Refuel and Rearm Point) location in the BSA (Brigade Support Area). Well trained and aggressive FARRP personnel, satellited forward in a "jump FARRP" to decrease the turnaround time for all aircraft, worked to insure that the aircraft stayed in the thick of the fight.

Ammunition caches of simulated TOW missiles were located well forward to allow attack crews to load their own missiles in order to keep turnaround times to an absolute minimum.

Flying low and slow with sling loads to avoid detection by OPFOR recon teams, CH-47C's from the XVIII Airborne Corps' 196th Aviation Company handled the majority of the FARRP relocation missions as well as resupplying the infantry task force. With the help of the 196th, FARRP's could be inserted or extracted in minutes.

The 82d Airborne Division's premiere in the combat-like conditions of the National Training Center proved to be an unqualified success. This can be attributed to a constant state of high mission readiness, thorough preparation, and effective application of all combined arms concepts to include maximizing the impact of Army Aviation.

All the Way, Airborne!

— MAJ Roger E. McCauley
Commander, Co. D
82d Combat Aviation Bn

Airborne Aviation: Training as we Expect to Fight

FT. BRAGG, N.C. — Being an "airborne" combat aviation battalion means increased capability. Besides being a vehicle to instill confidence, enhance teamwork, and test courage, being airborne allows us to be a full partner of the airborne infantry. An upcoming exercise is just one example:

• Situation — The 82d Airborne Division is in corps reserve on a mid-intensity battlefield. Along the FLOT the enemy's momentum has been abated and the corps commander wants to extend the battlefield and take the initiative. A small, unimproved, abandoned airstrip behind the enemy's first echelon is located between their two primary MSR's.

A Report by Captain Darrell E. Crawford

The terrain throughout the area is armor restrictive. The commander has decided to conduct a night airborne assault with one battalion to seize the airstrip, then airland the remainder of the brigade to interdict the MSR's and delay the second echelon forces in

RIGHT: The 82d CAB and 2nd BN, 504th Infantry team up for Exercise "Certain Bayonet" at Ft. Stewart, Georgia.

sector. A counterattack by reinforced front line units will link up with the brigade.

• Mission — The 82d Combat Aviation Battalion will conduct a night cross-FLOT operation to arrive at the airstrip at H+3 hours and air assault two airborne infantry companies into separate objectives.

• Execution — The objective is several hundred miles from Ft. Bragg on another post. To perform this mission 12 UH-60's, escorted by 4 AH-1's, will conduct a long and difficult cross country NVG navigation route and will refuel in a simulated forward aviation unit's FARP. Afterwards, they will occupy a nearby hide site to rest and prepare for the even more difficult mission ahead.

Fuel must be delivered to the airstrip with the initial night airborne assault and a FARP operational at H+3. Eight-foot heavy drop platforms, each with a FARE system and two 500 gallon fuel bladders, will be the first items airdropped.

A mass tactical jump will follow with pathfinders and fuel handlers from the participating combat aviation battalion. Once on the ground they will immediately move to the platforms and put a series of refuel points into operation. The brigade tactical command post will also jump in on the mass tac, along with two aviation LNO's.

At H+3 the aircraft will arrive using NVG's and immediately move into the airborne FARP's. Before daylight they will assume a PZ posture, air assault one company 20 kilometers to its objective, return to a separate PZ and air assault the other company 30 kilometers to its objective. Upon mission completion the aircraft will

return to the FARP, top off, and go back across the FLOT.

During the second phase of the operation the remainder of the brigade will airland. The platforms will be consolidated into a single FARP, and fuel will be airlanded by C-130 to resupply it. The air cavalry moves into the area to provide reconnaisance and security, and the attack helicopter company follows to provide close support to troops in contact. The Combat Aviation companies remain on call to conduct the air assault delay as planned.

This operation represents just another day in the life of aviation paratroopers at Ft. Bragg, and illustrates the importance of the airborne capability to the aviation units here. The 82d Combat Aviation Battalion strives to train as it will have to fight by planning and executing difficult and challenging missions designed to test capabilities, encourage initiative, and emphasize safety.

Whenever possible, and especially during Division FTX's, we seek the attachment of ground units and the opportunity to act as the maneuver headquarters for a specific mission. Aviation is especially well suited to execute the airland battle. From live fire air assaults to long distance, low level, night navigation over unfamiliar terrain, to engineer and artillery raids, detailed planning and precision execution are the goals we seek to achieve.

— CPT Darrell E. Crawford
Operations Officer, S-3,
82nd Combat Avn Bn

11th Group plays Brigade to Strike Deep and Win

APO NY 09025 — The deep attack operation conducted by the 11th Aviation Brigade during REFORGER 86 was dubbed operation EAGLE SOAR. The brigade's mission was to destroy two bridges along the Rhein Main Donau Canal approximately 70 km deep across the FLOT in order to delay withdrawing Blue forces.

When the mission was received, the Priority Information Requirements (PIR) list was refined and additional information requested. Immediately, the corps deep battle planning cell began work on the SEAD operation (Suppression of Enemy Air Defense).

Assets used included F-111, EC130 Compass Call, RC-12, RV-1D, OV-1D, and EH-1H. Our brigade Air Force Liaison Officer (ALO) also began requesting Battlefield Area Interdiction sorties for use in the objective area and enroute. The brigade Fire Support Officer (FSO) began developing his plan for coordinating artillery fires at the crossing point and enroute to the objective.

The brigade tailored its forces for this mission with a total package consisting of two lift battalions of CH-47 and UH-60 helicopters, an attack battalion of AH-1 COBRAs and OH-58 scouts, two light infantry companies, two TOW light anti-tank infantry companies (TLAT), an engineer company, four air defense Stinger teams, and an airborne pathfinder platoon.

Each task force was assigned the mission of destroying one of the bridges and providing an early warning screen to the east side of the canal. The attack battalion was given the mission of first attacking the target with rockets and 20mm cannon fire and then establishing a screen on the west side. They were also given two CH-47s to establish a FARP.

Long range reconnaissance patrols (LRRP) and pathfinders were inserted 48 hours early to observe and report enemy activity in the objective area.

The mission was to be flown using night vision goggles. An H-hour sequence was developed to time supporting fires and SEAD activities for the actual crossing operation. A diversion plan was developed to divert enemy attention to the south. Penetration points, routes, phase lines, and release points were developed for each Task Force. Intelligence updating was continual.

Command and control was to be exercised from the brigade UH-1 command and control helicopter. The mission was planned for a total ground time in the objective area of not more than one hour. All forces were scheduled to return across friendly lines prior to first light.

At the weather decision time

(four hours prior to launch) the weather was less than 300' ceilings and 1/2 mile visibility. Since much training time had been put into planning the mission, permission was received to execute during daylight hours. Though this was not as tactically sound it was felt that tremendous training benefit could be gained from executing the plan.

The actual weather at launch time was terrible. Snow storms and low ceilings were prevalent in the launch area. Some flights were having difficulty following their routes to their designated penetration points and had to divert to new routing. All battalions crossed the FLOT on their revised schedule and proceeded to the objective area.

A Report by Colonel Marvin E. Mitchiner

Enroute the battalion commanders reported crossing phase lines by code word to assure a coordinated attack on the objective. Intelligence was continually updated by airborne intelligence assets of the Corps MI Brigade and by TACSAT from the C&C aircraft to the corps ASIC.

When the flight leads of the attack battalion reported their release points (RPs) pathfinders monitoring the command frequency from their observation points in the objective area updated intelligence on the enemy situation on the bridges.

The attack and air assault proceeded as planned. The attack helicopters simulated firing flechette rockets and 20mm cannons as they passed over the objectives.

The TLAT forces landed by CH-47 and established their fighting positions and screens. The attacking infantry landed by UH-60 within 100 meters of each objective and secured them within 20 minutes. The combat engineers began laying their demolitions across the bridges. Each engineer platoon accomplished their mission within 25 minutes. The extraction helicopters were called from their lager sites and the extraction was accomplished within six minutes.

The return was uneventful. MEDEVAC and maintenance recovery aircraft were on standby, but were not called into action. Total assets crossing the FLOT were 47 helicopters, 18 TOW/scout vehicles, and 325 personnel.

This is only a very brief picture of an extremely complicated and detailed operation. We learned many lessons to help us conduct our next deep attack mission even better and demonstrated the corps combat aviation maneuver brigade's tremendous capability to strike deep and win.

— COL Marvin E. Mitchiner
Commander, 11th Cbt Aviation Group

III Corps Challenge: Improving Helicopter Gunnery Skills

FT. HOOD, TEX. — The versatility of the helicopter makes it ideal as a weapons platform, but helicopter gunnery is tough. How do we train gunners to do their best in combat and mold the man and machine into a fighting team?

A Report by Colonel Albert E. Hervey, Jr.

Fort Hood is the Attack Helicopter Capitol of the World and the arrival of the AH-64 APACHE only reinforces this fact. However, flight hours, training ammunition, and time on adequate ranges are always in short supply. Therefore III Corps, as the leader in the development of attack helicopter tactics and a pioneer in innovative methods of attack helicopter employment, is initiating a helicopter gunnery training program that will derive maximum skill and training benefits from the resources available — such as the flight simulator, MILES, AGES, and live fire.

In order to accomplish the goals of the III Corps Helicopter Gunnery Program, it was necessary that:

1) Gunnery qualification tables be developed which em-

phasize the primary weapons system (the missile) and integrate and utilize MILES/AGES and the simulator to supplement live fire opportunities;

2) portions of the current gunnery tables be rewritten to conform with range facilities;

3) unrealistic requirements associated with gunnery be deleted;

4) standardized score cards and target effect cards be established for each range; and

5) scout/observers be trained as area fire scorer to standardize scoring to assist in the train-up of scouts working with actual aircraft.

The bottom line — a more objective evaluation and better qualified pilots for the Mobile Armored Corps.

The III Corps COBRA Gunnery Program is a progressive three-phase program that begins when an aviator reports to a unit and culminates in live fire exercises. The phases are:

I — Individual gunnery evaluation conducted in the COBRA flight weapons simulator (AH-IFWS) as a part of commanders evaluation;

II — Pre-gunnery Training in AH-1FWS, and

III — Live Fire with a mix of MILES AGES and CPX drills interspersed.

In Phase I, newly assigned aviators whose primary aircraft is the AH-1 are to be given a weapons proficiency evaluation in the FWS in addition to the usual commander evaluations, to determine what, if any, additional gunnery training is required to progress to Phase II.

Additional training, if required, may be performed in the FWS or in the aircraft. However, the Phase I simulator must be completed to the stated standard prior to progressing to Phase II.

The integration of helicopter gunnery simulator tracking at Ft. Hood during the past few months has been the most recent addition to the Mobile Armored Corps simulator trends program.

The pre-gunnery training of Phase II is designed to develop crew coordination and execution, and to drill aviators in employment of primary weapons systems. In addition to the normal pre-gunnery activities, Phase II simulator tables are to be fired prior to the semi-annual live firing of tables V-VIII.

The results of simulator firing may be used by the commander to select crews for live fire exercise on the basis of individual strengths and weaknesses identified.

The Phase II table must be completed to the stated standards prior to proceeding to live fire. This data is recorded in the simulator trends report and in a special location in the ATM folder of the individual aviator.

Phase III, live fire for qualification, will be completed annually and will consist of: 1) crew tables; 2) team tables; and 3) a combined ARMS live fire exercise (CALFAX). The crew tables will be scored by scout pilots trained as scorers and team tables will be scored by commanders. The results of both tables will be recorded in the individual ATM records.

The force on force exercise using MILES/AGES will be fired prior to firing tables IX and X. Ideally, this exercise will be conducted at the National Training Center. But when time and resources do not permit, it may be completed locally.

Ft. Hood's new gunnery program makes a great place to serve even better. Making maximum use of attack helicopters and integrating them into the combined power of the Mobile Armored Corps is a challenge.

If you take the art and science of war seriously and want to serve your country in outstanding military organizations with the Army's most exciting mission, the best training areas and hard charging people, you need to be at Ft. Hood today!

Be all you can be! Training Excellence!

—COL Albert E. Hervey, Jr.
III Corps Aviation Officer

502nd CAB: Training Hard with the "Hell on Wheels" Division

FT. HOOD, TEX. — Last August (1985) the 502d Combat Aviation Battalion (2d Armored Division, "Hell On Wheels") looked forward to a full fall training schedule capped by an ARTEP in December followed by a major 30 day Division field exercise in January "Hell On Wheels 1" (HOW 1).

Little did we know at that time that a significant emotional event was on the horizon — a major deployment of a reinforced aviation company Task

Force out of the country for over four months.

In late October that prospect became a reality with the deployment of Task Force 502 via 6 C5As. The tremendous training opportunity was equalled only by the strain on the battalion back at Ft. Hood. However, we proved equal to the task and conducted the deployment, continued to train in Texas and, with the help of a few pilots, mechanics, and supply types from the 149th Combat Aviation Battalion, 49th Armored Division, Texas ARNG, were able to fully participate in HOW 1.

A Report by Lt. Colonel Paul C. Hollowell

During a 23 day period of HOW 1 the battalion flew 790 hours. We considered this a substantial accomplishment in light of the deployment of major battalion elements out of the country and the composite nature of our stay behind elements. We put teeth in the One Army concept.

Shortly after our forces returned to the States, we created another detached element to join up with the 2d Brigade of the Division to head for the National Training Center. Some of the returning soldiers only had about three weeks between movements. While those trrops and aircraft are in California, the 502d is undergoing a metamorphosis into the 2d Armored Division Combat Aviation Brigade — "HELL'S WINGS".

We have begun activation of an additional combat aviation company and will raise and lower a variety of flags and guidons in early June to truly kick off the Brigade.

The 502d Combat Aviation Battalion almost disappears in the late summer of this year as a result of the reorganization only to re-emerge in the late spring of 1987 as an Attack Helicopter Battalion. The old sports program salesman's pitch that "you gotta have a program if you wanna follow the game", truly captures our situation.

We are writing the program as we go and still have a tough time keeping up with the players. The future looks just as exciting with another National Training Center rotation in June and October and a major, first of its kind, III Corps Aviation FTX in August. If you are bored with your current assignment join us in the "Hell On Wheels" Division and I guarantee you a change of pace.

— LTC Paul C. Hollowell
Cdr, 502nd Combat Aviation Battalion

Dramatic Changes Underway! Aviation in Fourth U.S. Army

FT. SHERIDAN, ILL. — The Army is caught up in unprecedented change. Within Fourth U.S. Army, the DA programmed changes in Reserve component aviation affects nearly every facet of endeavor.

Restructuring the Reserve Component aviation force to mirror the Active Army will bring with it a greater capability for training and doctrinal implementation of combined arms operations in a tactical Airland Battle scenario.

The Army of Excellence (AOE) will bring about major aviation force structure changes. At last count, USAR unit activations scheduled within Fourth Army include a combat aviation group, a combat aviation battalion, three combat aviation companies, a theater aviation company, and an aeromedical detachment.

Significant AOE force structure changes are also occurring in Fourth Army's National Guard aviation units. Many aviation sections now organic to Engineer Groups, Infantry Brigades, CEWI Companies, COSCOMs and ARCOMs are programmed for inactivation.

Their aircraft, personnel, and equipment will be absorbed into the new AOE force structure, partially resourcing this major reorganization. The AOE design will provide an aviation chain of command and Table of Organization and Equipment mission which parallels that of the Active Component.

Army of Excellence transition will dramatically improve combat capability. AOE aviation units will be fully functioning mo-

bilization entities, able to train with and deploy alongside other combat arms units as a full combined arms team member.

Long overdue equipment upgrades are also occurring as part of this Force Modernization effort. In one case, a CH-47 has been issued to a USAR AVIM unit for the conduct of hands-on training. Two UH-60 helicopters have also been issued to a Fourth Army National Guard AVIM company.

The issuance of first line helicopters such as CH-47s, UH-60s and AH-64s to Reserve Component AVIM units enables them to conduct maintenance training on those airframes that they will have to repair in the post-mobilization environment.

Attack helicopter units are receiving AH-1 COBRAs to replace their non-deployable, early Vietnam-vintage UH-1M gunships and redistribution of Night Vision Goggles (NVGs) is being accomplished by FORSCOM and the National Guard Bureau. This will provide all our aviation units the hardware necessary to enable qualification training and enhance their night operations capability.

Many Reserve Component aviation units within Fourth Army's area are well along in their efforts to achieve the Army goal of 100% NVG qualification.

One of the most dramatic changes that has taken place in Fourth Army involves aviation tactical training. Most of our aviation units now deploy for a minimum of nine consecutive days of sustained tactical field training during their two-week Annual Training period.

The watchword for training is "realism." We conduct training that portrays battlefield operations with as much fidelity as possible. Combined arms, 24-hour operations emphasizing night and NBC training are commonplace and external ARTEPs conducted regularly.

A Report by Lt. Colonel John E. Barrington

Nearly all of our units have ARTEP evaluations scheduled at three-year intervals. This was accomplished as a centralized planning effort coordinated by our DCS for Training. All Fourth Army Reserve Component units established five-year training plans, which were coordinated at CONUSA level to insure that the appropriate mix of combat, combat support and combat service support units would be attending Annual Training at the right times to facilitate realistic combined arms integration.

Most of the aviation ARTEPs will be developed and administered by the 85th and 100th Maneuver Training Commands, which insist upon and achieve exceptional tactical realism.

To spread the gospel of "Airland Battle" to its aviation units, Fourth Army uses its Centralized Aviation Readiness Training (CART) Team which tailors Airland Battle training to unit needs and time available. Normally, training begins in the classroom with an update on the current and projected threat, followed by presentations on the overall concept of multi-service cooperation to defeat an enemy in depth, the responsibilities of the various echelons of command, and current airspace management concepts and control measures. Finally, hands-on training is conducted in NOE environments, normally during Annual Training or in conjunction with NVG qualification programs.

A great deal remains to be done. The years ahead will see an exciting transformation as aviation in the Reserve Components improves its capability as a combined arms team player and combat multiplier on the Airland Battlefield.

—LTC John E. Barrington
Chief, Centralized Aviation Readiness Training Team

R & D

Air-to-Air Combat R&D efforts continue apace at AVSCOM

ST. LOUIS, MO. — The use of Army helicopters for air-to-air combat is receiving increased attention in the Aviation Research, Development and Engineering Center. Currently, there are several research and development projects that are air-to-air related which support near, mid, and far term requirements: Air-to-Air Stinger (ATAS), Air-to-Air Fire Control, and Air-to-Air Combat Tests.

The ATAS program is nearing maturity in its full scale development phase, with DT/OT II scheduled later this year. Low rate production had been scheduled to begin in FY87 for a First Unit Equipped (FUE) date during the third quarter of FY88. However, due to the cancellation of the SGT YORK program, we are attempting to begin low rate production prior to 1 October 1986, and accelerate the FUE date.

In addition the ATAS integration program for the AH-1S, AH-64A, and UH-60A are to be accelerated to help fill the void left by the SGT YORK cancellation. When the Stinger is integrated into the AHIP Mast Mounted Sight, AH-64 Target Acquisition/Designation Sight, and COBRA-Night Sight, we will achieve a 24 hour a day air-to-air capability. This program is being managed by the ATAS Division of the Army Helicopter Improvement Program (AHIP) at AVSCOM.

The Air-to-Air Fire Control program objective is to develop and apply fire control ballistics equations for effective engagement of airborne targets with existing helicopter guns. Previous research has developed a generic fire control model which has application to the turreted guns on the AH-1S and AH-64A. Currently this fire control model is being incorporated into the AH-1S M-197, 20mm turret for test. The fire control software will be applied to an additional card in the COBRA's fire control computer.

A Report by Colonel (P) William H. Forster

Flight demonstration is scheduled for the first quarter of FY87. Follow-on efforts will include application of the air-to-air fire control equations to the 30mm APACHE chain gun. This program is being managed by the Aviation Applied Technology Directorate, Weaponization Technical Group at Ft. Eustis, Virginia.

The Air-to-Air Combat Test (AACT) program is a five phased test with an objective of determining aircraft structural requirements for the rigorous maneuvers required in air-to-air combat. Air-to-air maneuvers from FM1-107 were used, without tactical play, to determine the stress loads induced into airframes and dynamic components.

Phase One was conducted in February, 1983, to establish the test data base utilizing an OH-58A and AH-1S. Phase Two was conducted in July, 1983, refining the flight test methodology and used an OH-58A, UH-60A, and modified S-76 aircraft. As expected the recorded structural data revealed that a reduced life of selected components of these existing aircraft must be accepted if reoccuring air-to-air combat maneuvers were performed.

Phase Three tested an OH-58A, AH-1S, 530MD, and a MBB BK-117 during December of last year. The final test data are still being analyzed, but the preliminary results were similar to those of Phase Two. During these tests a fixed guns forward eye-safe laser was used to indicate hits during maneuvers.

The objective of Phases Four and Five is to integrate this laser into the flex turrets of our attack helicopters and test the structural loading of the same maneuvers. Additionally, one aircraft to be tested will have a hub spring to restrict main rotor flapping. Phases Four and Five are scheduled for early 1987 and mid-1988, respectively.

This program has extensive application to all aircraft, present and future, which are potential combat air candidates. It will confirm maneuver and component life limits on existing aircraft and establish structural criteria for all future aircraft expected to participate

in air-to-air combat.

What does the future hold in store for Army Aviation's role in combat air-to-air capabilities and missions? As we see it in the RDE Center, three distinctive missions are the key to aircraft configurations and capabilities. These missions are self defense, air defense, and offensive/counter air.

Self defense keys the Material Developer to give our aircraft an effective defense capability when chance encounters occur during normal mission scenarios. Agility and maneuverability may be important operational capability needs, but the accuracy and responsiveness of the weapon system is the leading factor in self defense requirements.

Air defense may or may not utilize the same weapon systems as for self defense, but the key in this mission is communication and control. As a part of the integrated Air Defense Team, the helicopter must receive and transmit real time information, regarding early warning target location, weapons system status, and engagement criteria.

Automatic Target Hand-off systems, Tacfire formatted networks, and Command and Control Ground Stations are examples of the avionics programs and equipment which will be required to perform air-to-air missions as part of an area Air Defense network.

Offensive air or counter air is a combination of the above capabilities plus agility and maneuverability characteristics superior to the threat. The Light Helicopter (LHX) Scout/Attack, although optimized for ground attack, will be well suited to perform counter air missions.

This aircraft will have the toughness and performance margins for air-to-air combat as well as the high technology state-of-the-art sensors, fire control, and communications capability required to defeat the majority of the aviation threats on the modern battlefield.

Many issues are still unresolved and much work remains in developing high capability helicopter air-to-air capabilities. However, the inherent mobility of Army aircraft provides the capability to thicken air defenses quickly at critical points and move over and around smoke and obstacles that impair ground system effectiveness. These capabilities when complemented with effective sensors and weapons will provide the Combined Arms Team with a new dimension of protection against threat aircraft.

—COL (P) William H. Forster
Deputy Commander, R&D
USA AVSCOM

ATC (Continued)

available — the fixed base system which will be common to all civil and military fixed base operations and the mobile MLS (MMLS), formerly TMLS, designed specifically for DOD fixed and rotary wing tactical operations. Major advantages of MLS over ILS and PAR include greater flexibility of approach paths and angles, higher availability, less interference from terrain and weather, less installation cost, and, for the MMLS, a set up time of approximately 30 minutes.

GPS offers quantum improvements over other systems available today. For the first time an accurate three dimensional, worldwide system will be available for civil and military use. The GPS satellite constellation will, when fully operational, consist of 18 satellites plus three on-orbit active spares in 20,000 km, 12-hour orbits, evenly spaced in six orbital planes such that a given point, anywhere on the earth, will have four to seven satellites visible at all times.

The major advantage of a satellite based navigation system such as GPS is that precision navigation will now be possible anywhere in the world and can be received by passive receivers in man-portable systems, ground vehicles, surface ships, aircraft, and spacecraft. The GPS will provide accurate, jam-resistant, all weather positioning information for military needs on a worldwide basis and when integrated with on-board navigation systems such as INS will allow non-precision approaches anywhere in the world.

Just a few years ago this might have all been considered a "Buck Rogers" scenario. The technology is here today and the operational capability is just around the corner.

— COL William E. Trent
Director, Aero Svcs Office
U.S. Army ATC Activity

Survivability

ASE Development, Fielding, and Training moves ahead!

ST. LOUIS, MO. — The Aircraft Survivability Equipment (ASE) program office, as the materiel developer, continues a dynamic relationship with the Aviation Center, the user representative and combat developer, to improve Army Aviation battle mission accomplishment with better survivability.

Uniquely this development team works hard on hardware, tactics and training ingredients of survivability with almost equal vigor to field ASE that supports how we expect to fight.

A Report by Colonel Curtis J. Herrick

Hardware-wise, fielding is underway for the product improved radar waning receivers for the Special Electronic Mission Aircraft. The APR-39(V)2 has a digital display and the APR-44(V)3 provides increased coverage. An ASE suite will be fielded with the APACHE in the Total Package Unit Materiel Fielding this spring.

In the tactical realm the ASE project office is providing support to the Aviation Board at Ft. Rucker and the Intelligence Board at Ft. Huachuca on their Army Aviation tactics and ASE Force Development Test and Experimentation efforts for the respective Attack and SEMA aircraft mission areas. These evaluations are to firm the battle tactics with ASE and to provide current data for use in aviation effectiveness models.

Training has begun with the interim ASE deskside training device (ASET I) that was fielded last summer to 140 locations. This system is a classified software package that teaches threat, ASE operations, and tactics with an examination phase on the intelligence community MICROFIX computer. Relatively successful sharing arrangements continue to accomplish this training with the MICROFIX systems. In May, individual MICROFIX computers will begin fielding to each Synthetic Flight Training simulator site to better support this training.

The follow-on deskside trainer, ASET II, should reach aviation companies with the Electronic Information Delivery System (EIDS) in FY 88. Five additional Tactical Radar Threat Generators (TRTG) will begin fielding this fall. The fielding locations are being verified at the Worldwide Aviation Logistics Conference.

CW4 Satterfield of the 15th Military Intelligence Battalion at Ft. Hood is resourcefully examining the use of an old kneeboard trainer for OV-1 in-flight warning receiver training. A 9th Infantry Division evaluation of the Airborne Laser Electronic Receiver Training Systems (ALERTS), a ground emitter and airborne warning receiver package system, should begin this fall.

A number of actions are underway to improve the execution of ASE training. They include updating the ASE tasks in the Aircrew Training Manuals and Army Training and Evaluation Programs and expanding ASE readiness reporting requirements. The fielding of considerable amounts of ASE is providing training in the operation of the equipment, checking the adequacy of the maintenance program and increasing the units' readiness in case of rapid deployment. Units are being encouraged to verify their expendable chaff and flare basic loads and to accomplish training with the M-130 General Purpose Dispenser.

Recent events reported in the open press concerning the downing of helicopters with heat seeking missiles in Afghanistan and the U.S. Navy's successful operations against the SA-5 surface-to-air missiles in the Gulf of Sidra point out the importance of having effective ASE and executing sound tactics. Your challenge in the field is to develop your aviation tactics and ASE operational skills to the combat experienced level so that you will win on the first day of the next battle.

— COL Curtis J. Herrick, Jr.
Project Manager, Aircraft Survivability Equipment

Test & Evaluation

Aviation Board Tests New Radar Warning Receiver

FT. RUCKER, AL — Because of the increased sophistication of threat radars and ADA systems, the need to develop equipment capable of identifying and locating such threats has become a prime concern of the Army Aviation community.

Consequently, an intensive research effort was initiated toward attaining an effective solution to this problem. One result has been the development of the AN/APR-39A (XE-1) Radar Warning Receiver (RWR) currently referred to as the XE-1.

This receiver underwent operational testing during the period June through October, 1985. The purpose of this test, conducted by the U.S. Army Aviation Board, was to assess the effectiveness of the XE-1 to enhance the survivability of Army aircraft and crews in a hostile environment and to ascertain the training requirements for crews to effectively use the system against a hostile element.

Four antennas, two receivers, a processor, and a video scope comprise the XE-1 system. These components replace the current V1 components item for item. However, the video scope of the V1 system can be used with the XE-1 system. The XE-1 system will also interface with the other ASE equipment on the aircraft, permitting maximum use of the available space.

Portions of the test were conducted at the Naval Weapons Center, China Lake, Calif. and at Ft. Rucker, Ala., utilizing assets from D Company, 229th AHB, located at Ft. Rucker. The initial training conducted at Ft. Rucker demonstrated that the XE-1 system is much easier to learn to use effectively than the older V1 system because of the way the information is presented to the pilot.

The visual symbology associated with the XE-1 identifies the threat and indicates both its direction and priority, i.e., searching, acquisition, etc. The audio provision embodies a computerized voice that announces what the display is showing. There are no tones to identify (a requirement on the V1 system) and no interpretation of the different strobes required.

A Report by Colonel Stanley E. Grett

The result is increased pilot's awareness of the threats involved and a reduction in his reaction time. This combination greatly increases the aircrews' survivability and facilitates their timely and appropriate response to the threat.

During one phase of the test, two AH-1Ss and two OH-58Cs were deployed to China Lake to operate against various simulated threat radar systems. One OH/AH team flew aircraft in which the V1 system was installed. The other OH/AH team flew aircraft in which the XE-1 system was incorporated.

All crews were trained in the use of both the XE-1 and the V1 systems and they alternated between the two cockpit configurations. This allowed a comparison study to be conducted to fully appraise the potential of each system.

The China Lake area is representative of a high altitude, desert environment. Consequently, the landscape allowed the threat systems to be employed to the limits of their usable range, fully challenging the capabilities of the APR-39 systems. Standard Army doctrine was used to maneuver the test elements (Air Cavalry and Air Attack) in the test area. Later in the test, these maneuvers were modified to further the aircrews' chances of survival.

On completion of those portions of the test conducted at China Lake, the aircraft returned to Ft. Rucker for additional training of the crews in evasive maneuvers. During this phase, a portable threat simulator, the Sentry Dawg, was employed. This simulator can simulate up to five different threats.

While most of the test data and results are classified, we can report that the system worked well in the simulated threat environment and possessed the following desirable features:

- it has extended frequency

coverage over the present V1 system,

- identifies the threat and provides both an audio and visual warning,
- announces the clock direction of the threat,
- denotes the mode of the threat,
- self tests itself and reports its status to the pilot,
- is reprogrammable to different threats and frequency changes, and
- interfaces with other ASE equipment.

— COL Stanley E. Grett
President, U.S. Army
Aviation Board

DCD (Continued)

forward to fully accepting this important and valued member to the Aviation family.

Aviator's Night Vision Imaging System (ANVIS) — Army Aviation units worldwide started receiving their initial issue of the production ANVIS in April, 1986. The introduction of ANVIS will finally provide aviators with a tool of the trade that will significantly improve our combat effectiveness across the entire spectrum of aviation employment.

UH-60 Command and Control (UH-60 C2) — The USAAVNC will continue to support the ground commander's need to have an airborne command and control aircraft available when he must rapidly move around the battlefield and provide timely direction. With that intent in mind we have identified a need to modify the UH-60 to accept a product improved AN/ASC-15B. The UH-60 will afford the commander a system with more range/loiter time, high/hot day performance, internal space, better onboard navigation system and increased safety. The approval of the concept is moving swiftly through the acquisition system as no other has done with approval at HQ TRADOC already underway.

I want to again point out that the immediate need to put C2 in the UH-60 has caused us to use the AN/ASC-15 with advanced product improvements. A limited number of these systems will be issued to field units by the end of this year. Following this initial effort the USAAVNC will be developing a follow-on system that will provide three UH-60 C2 consoles per Corps and two per Division.

This console will take advantage of incorporation of the standard maneuver control system architecture to include digital map display and optical readouts. The system will allow the airborne ground commander to have full access to selected C2 data and provide him the needed information in real time so he can easily control all of his ground units.

Good ideas come from the soldiers. If you have any problems, or if something is broken and needs fixing, please write or call me.

— COL Frank H. Mayer
Director of Combat Developments, USAAVNC

Liaison (Continued)

tions? Quite honestly, no one really knows. Even as mandated calendar milestones approach, debate continues in both the House of Representatives and the Senate over critical issues such as the Budget Committee's Concurrent Budget Resolution and the Ways and Means Committee's tax reform legislation, both of which have major impacts on what finally emerges as the FY 1987 Budget for the Department of Defense.

— MG Richard D. Kenyon
Chief of Legislative
Liaison, HQDA

USAALS (Continued)

now for a review of all aspects of combat service support for the Aviation Brigade. Accordingly, we have kicked off an Aviation Combat Service Support Study. In it we intend to do a bottoms-up analysis of total support needs for the brigade across the spectrum of all its employment options. From that analysis we expect to derive recommendations for better support procedures and for changes to the division logistics support base organization that will better fit the needs of a fighting aviation brigade.

This study will be conducted within both the logistics and aviation communities and will be initiated in May of this year. Our conviction at the School is that because of the criticality of the role of aviation as a member of the combined arms team, and because of the size of the investment the Army has made in aviation combat power, we must go the limit in ensuring that logistics support will not fall short.

— COL Ronald L. Bellows
Asst. Commandant, U.S.
Army Avn Log. School

The challenges we face
(CONTINUED FROM PAGE 2)

full range of capabilities that tactical air and fixed wing air, as well as Army Aviation, can provide is another dimension. So, I think there's a challenge not only for the aviation community, but also for the ground community to understand better the roles that each can play as part of the Combined Arms Team in our field exercises.

Now that comes back to the first point I made about some of the folks who are now retired from the Army, and some of the folks who are in the Army, who have questioned the value of the Aviation Branch. There used to be an argument that if we create an Army Aviation branch, it's just a short way to another Army Air Corps — a service that would be less involved in the Combined Arms Team than all of us think they are now, and would want them to be.

I think, therefore, that as the schooling of our aviators continues, and as the schooling of our ground commanders continues, that we can do more to insure a better understanding of the role of aviation as an integral part of the combined arms team.

Furthermore, in our units — in the 101st Airborne Division and other units now that we're beginning to form the CABs in the divisions and in the corps — we can assure that the combined arms dimension is concrete in the practice of our field exercises on a day to day basis and that Army Aviaion is an integral part of the future of the Army and is not going to go off on its own. But that's going to be a challenge, it seems to me.

Safety consciousness

Safety, of course, continues to be an important challenge. The aviation part of the Army has pioneered much of the safety consciousness that we have in the Army today. And as many of you know, we have now broadened the Safety Center activity to look at ground accidents where there have been fatalities — and we've learned a lot from that process.

That's not to say that we don't have farther to go. We do have farther to go in building a better consiousness of safety — not only in how we design our equipment, but also in how we assure that the life cycle development of the equipment, the life cycle practice of our equipment, assures that the quality is built into the parts and that the training also has a safety consciousness built in.

I use the phrase that we need to develop among all of our soldiers a "sixth sense of safety." But I think that this sixth sense of safety is needed not only in our day to day activities on the ground and in the air, but we also need this sixth sense of safety as we design aircraft and as we test parts to be sure that, in fact, they do have the life cycle that we anticipated, that each part will last the number of hours that we anticipated.

New technology

I think we've got a challenge ahead as we try to harvest the benefits of technology and bring it into the Army early on. That's the vision of the LHX — that we can actually leap ahead with new technology and bring that into the Army. It's going to be a big challenge for us to convince those doubters who question whether we can afford that kind of leap-ahead — whether, in fact, we even need that kind of capability in our helicopters. I think it's also going to be a big challenge for industry to try to deliver the expectations that we ask of them in the LHX program.

Offensive air-to-air

There's another big challenge for the future and that involves some of the specific roles for our helicopters, particularly our attack helicopters. As some of you know, we are beginning now to move in the direction of putting defensive missiles on helicopters so that if they are jumped by enemy attack helicopters, they can go after them in a defensive way. But, when you think about it, attack helicopters — and even scout helicopters — may very well be in a position on the future sophisticated battlefield to go on the offensive in killing attack helicopters.

We find now, as we went through the DIVAD study and the follow on to the DIVAD, that the hovering attack helicopter is one of the most serious threats that we face on the ground and in the air.It's very difficult to pick up a hovering helicopter, even with a fixed wing close air support aircraft.....

So it may be necessary for us to think — doctrinally as well as in terms of our equipment — that our helicopters may be in a position in some future circumstances to actually go on the offensive to seek out and kill these hovering helicopters which may very well be a more lethal threat to our maneuvering tanks, for example, than enemy tanks.

And, just as we do with close air support and battlefield area interdiction in terms of apportionment —the commander making the decision says: "I will apportion so many sorties to CAS and so many to BAI or into offensive counter-air — it may be necessary for the commander with his own helicopters to make a similar allocation between use of helicopters in a defensive mode to kill tanks and the use of helicopters in an offensive mode to actually go out and to kill hovering helicopters or kill helicopters that they may be very well able to acquire.

This is a new doctrinal challenge that we have to think our way through and that may, as I say, lead to changes in our doctrine and changes in the in the equipment that we hang on helicopters in the way of guns, as well as in the way of defensive or offensive missiles and acquisition systems.

Spirit of innovation

Now, of course, how we go about meeting these challenges will depend on all of us. The industrial community, with representatives at this AAAA Convention, the schoolhouse folks that we have, **Don Parker** and his people, the retirees and the contributions that they continue to make, as well as the rest of us in the Army, are all going to be challenged to deal with these new questions that are raised.

How do we go about doing that in a better way? Part of the answer, I think, deals with the spirit of innovation that has permeated the whole aviation industry and Army Aviation in particular. There are a couple of books that some of you may be aware of: **In Search of Excellence,** and another by one of the same authors — **A Passion for Excellence.**

They talk in these books about what has made some commercial companies great versus other companies that are mediocre or actually fail. And the single issue that they point out that makes a difference is the spirit of innovation, the spirit of leadership, a hands-on leadership, a willingness to champion new ideas, a willingness to go the extra mile in bringing forth these good ideas.

That's what's going to make a difference, it seems to me, in meeting the challenges that I've enumerated for you.

The spirit of innovation, the championing of new ideas, and the willingness to reach for the future as opposed to being content with what is ever present in the near term. That's going to be one of our most important ways of getting into the future and dealing with the challenges that we face.

A last thought

Now the last thought I want to leave with you also deals with leadership and the spirit of innovation.

As some of you may know, from year to year the Army adopts themes to focus energy from the bureaucracy as well as the individuals. We've talked about the theme of the "Year of the Army Family." Last year was the Army's

SFC(P) WALTER D. SMITH, CENTER, THE FIRST RECIPIENT OF THE AAAA'S TRAINER OF THE YEAR AWARD", IS PRESENTED HIS TROPHY BY COL RONALD L BELLOWS, LEFT, ASST COMDT, USAALS, FT. EUSTIS, AND COLONIAL VIRGINIA CHAPTER—AAAA PRESIDENT, AS AWARD SPONSOR GORDON J. STRED, VP—MARKETING, LINK FLIGHT SIMULATION DIV.

"Year of Leadership." And we've done a number of things to improve our support of families and to enrich our understanding of leadership, and what more can be done.

This year, the Secretary and I have picked the theme, "Values." When you think about it, they're sort of tied together with the "Year of the Family" and with "Excellence" and "Fitness" and "Leadership."

Values, of course, are tied to championing new ideas. Values, in a sense, can be tied to the spirit of innovation, the willingness to be courageous in reaching for the future, and the willingness to overcome obstacles. And it seems to me that the theme "Values," therefore, captures a sense of the spirit that we must reach towards in the the future — not only in Army Aviation, but in other things that are important to the Army's future: tactical understanding, the support of our families, and support of the leaders — these are other dimensions that are associated with values.

One of the reasons that **Jack Marsh** and I selected Values is because we think that we have an opportunity to enrich the values throughout the Army, not only among those that are in the Army, but among those who support us, and those who are coming in to us as our recruits. And out of all of that effort aimed at enriching our sense of values, I think, comes a stronger Army and a stronger support mechanism that leads to a better Army.

I received a letter recently from a young Army wife who had lost her husband at Gander, Newfoundland, in the tragic crash that cost us something on the order of 248 soldiers from the 101st Air Assault Division. And this letter shouts to us about values and tells us, it seems to me, that we're on the right course in what we have tried to do in enriching family support and also in strengthening leadership and that we are on the right course in our commitment to strengthening values in the Army.

The fallen Eagles

She writes to me, saying: "Let me thank you for myself, and for all the other wives and families of our dear fallen Eagles, and let me thank you for the fallen Eagles themselves, but most of all for my late husband because you came here to share with us in our grief and our sorrow. I just wanted to thank you for the tribute you paid my husband after his death. You see, Rudy, was a professional soldier and he loved what he was doing. He was very proud of his two tours as a Captain of COBRA gunships in Vietnam and, more recently, of his three tours of duty with the multi-national force observers in the Sinai Desert. I was, I am, and I always will be very proud that my husband was a professional soldier — and a damn good one."

A sense of patriotism

You see, that letter reaches out to all of us about the sacrifices we make in uniform in the Aviation branch as well as in the other branches of the Army. It also reaches out to us and tells us a lot about the sense of patriotism that those of us who are in uniform and those of us who support our national security are imbued with. It shouts to us about the bonding of a strong family that not only loves the members of the family, but loves the institution of the Army and what the opportunities of the Army offer. And so, it tells us a lot about where we are headed and the challenges we face in trying to protect and preserve the values that we cherish.

Thank you very much and God bless. IIIII

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Briefs

New Chapter Officers: The **Citadel Chapter** elected the following as '86-'87 officers: Cdts Kevin P. Dragnett (Pres), John Kubitz (SrVP), Marvin Gordner (Sec), Robert Patterson (Trea), Marvin Wright (VP, Memb), Pat McKenna (VP, Pgm) and John Hodgson (VP, Publ).

New officers at the **Pikes Peak Chapter** include LTC Wayne R. Hansom (Pres), MAJ (P) Stephen Snow, and LTC Michael Mague.

At Binghamton's **Edwin A. Link Memorial Chapter** Fred S. Belyea is the new President. He is joined by Peter F. Bauman (SrVP), Michele L. Palmer (Sec), Gene Kopes (Trea), William P. Hush (VP, Memb), Anthony J. Del Grosso (VP, Prog), Peter G. Parsons (VP, Publ), and J. Tornillo (VP, Indus Aff).

New officers at the **Army Aviation Center Chapter** are LTC Alvin B. Cobb (Trea), LTC Ace Cozzallo (VP, Prog), CPT Bill Shurtz (VP, Ind. Aff), Dick Lewis (VP, Res/Ret Aff), and CW4 Windell Mock (VP, AWO Aff).

COL Alan R. Todd is the **So. California Chapter's** new President; the **Rhine Valley Chapter's** new SrVP is LTC John W. Schachleiter; and MAJ Bruce Sampson was elected Trea of the **Mainz Chapter.**

LTC Ted D. Cordrey (Pres) and CPT Michael Troyano (Trea) are newly-elected **Mid-America Chapter** officers at Ft. Riley, while **Lindbergh Chapter** elections returned COL Ben F. Johnson, Ret (VP, Indus Aff), COL Charles Brown (VP, Mil Aff), CPT William J. Mauter (Flyer Editor), and Kenneth Kellogg (Spec Asst) to office.

LTC William R. Clontz is the new **Coastal Empire Chapter** President; and the **N. Texas Chapter** has Eddie E. Moore (Pres), Ike Jackson (VP, Memb), and James J. Ulakovic (VP, Prog) as new Chapter officers.

AAAA Overview

■■ New enrollment policy: "Share the wealth!"

The Association's January 15, 1986-January 15, 1987 Chapter Membership Enrollment Contest features a new wrinkle: **"Share the wealth!",** according to **MG Story C. Stevens,** Nat'l Membership Chairman. Each Chapter that posts a **net** gain during the period will be reimbursed at a rate of $2.50 per net member gained. With more than three quarters of AAAA's 51 Chapters posting a gain each year—but only six earning an Enrollment Prize each year for the past few years—it's a program that should meet with widespread approval.

At the same time, year-end cash prizes will be awarded at the April, 1987 National Convention in Dallas-Ft. Worth to the top three Chapters in each of AAAA's three categories:

Awards for **Master Chapters** (Those having 225 or more members as at Jan. 15, 1986): 1st Prize - $400, 2nd Prize - $300, 3rd Prize - $200.

Awards for **Senior Chapters** (Those having 112 to 224 members): 1st Prize -$300, 2nd Prize - $200, 3rd Prize - $100.

Awards for **AAAA Chapters** (Those having 25 to 111 members): 1st Prize - $200, 2nd Prize - $100, 3rd Prize - $50.

■■ Support for aviation enlisted students

At its April 13 business meeting, AAAA's National Executive Board approved a motion calling for a $7.50 (discount) initial-year membership enrollment fee for aviation enlisted students at Ft. Rucker and Ft. Eustis. At the same time, the Board voted to continue the $7.50 (discount) initial-year membership enrollment fee for primary flight students at Ft. Rucker.

■■ Hall of Fame Trustees select 22 candidates

The eight-member Board of Trustees of the Army Aviation Hall of Fame chaired by **GEN Hamilton H. Howze** selected 22 candidates for placement on the mid-July ballot to be mailed to some 4,000+ AAAA members with seven or more years of consecutive membership.

■■ Two new funded scholarships to be offered

The AAAA Scholarship Foundation will provide two new annual memorial scholarships of $1,000 for Fall, 1987 college-entry children of AAAA members. **MG John L. Klingenhagen,** Foundation President, indicated a **Frank S. Besson, Jr. Memorial Scholarship** is being capitalized by the Lindbergh Chapter of AAAA, while a **Kenneth K. Kelly Memorial Scholarship,** given this year for the first time, will now be underwritten as a permanent scholarship by AAAA's Monmouth Chapter. (See the photos on the top of page 22)

Besson

Kelly

Klingenhagen

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